



## Training Manual

### SELCOPYi Release 3.50

The screenshot displays the SELCOPYi software interface with the following components:

- Library List:**

```

Library List: USER123.SELCTRN.SAM1
View Refresh Back Forward FDB Text
Command>
Library> USER123.SELCTRN.SAM1
          -Member- CurSize ----Last
          Z25T1CPC 18 2012/11/
          -USER123.SELCTRN.SAM1(Z25T1CPC)
          Command>
          <-----1-----2-----
          000001 Declare
          000002 01 TRACK
          000003 05 PERSISTENT_ID
          000004 05 TRACK_NUM
          000005 05 TRACK_ID
          000006 05 NAME
          000007 05 ARTIST
          000008 05 ALBUM
          000009 05 TOTAL_TIME
          000010 05 FILE_SIZE
          000011 05 BIT_RATE
          000012 05 SAMPLE_RATE
          000013 05 YEAR
          
```
- Primary Option Menu:**

```

File SwapList Window Help QuickRef
Command>
Z25GPRIM
0 Settings      Set SELCOPY/i options
1 Text Edit     Edit/View small text-type files
2 Data Edit     Edit/Browse potentially large data files
3 List          List Volumes,UTOCs,Datasets,Members etc
4 Home         Edit and execute point-and-shoot commands
5 Copy/Reformat File Copy with optional copybook reformat
6 Search/Update File Search/Update/Copy/Reformat
7 Compare
8 Utilities
9 Structure
10 Filter
11 Print
12 DB2
T Training
WL Window List
X Exit
Use F4 [WINDOW]
Use "="

```
- USER123.SELCOPYI.CMX Window:**

```

Command>
000001 ** USER123.SELCOPYI.CMX ***
000002
000003 <11 USER123.SELCTRN.SAM1
000004 <edit USER123.SELCTRN.SAM1(Z25T1CPC)
000005 <edit USER123.SELCTRN.SAM1(Z25T1CPC)
000006
000007
000008 | Edit sample training data file using Sample COBOL copybook #1
000009 < sd Edit USER123.SELCTRN.Z25T1DAT
000010 using cobol USER123.SELCTRN.SAM1(Z25T1CPC)
000011

```
- Data Table:**

PERSISTENT-ID	TRACK-NUM	TRACK-ID	NAME
#2	#3	#4	#5
AN 1:16	ZD 17:3	ZD 20:4	AN 24:120
00000001	CB12DD714D51828C	1	2083 Rolling In the Deep
00000002	2648A25633D15404	2	2085 Rumour Has It
00000003	9815923C6D2E6830	3	2087 Turning Tables
00000004	7D003FF752074C18	4	2089 Don't You Remember
00000005	AED739D8574AA4C5	5	2091 Set Fire to the Rain
00000006	E755BCE1CF5CDEA7	6	2093 He Won't Go
00000007	6798C2AB0AFB2571	7	2095 Take It All
00000008	962B35D1647DE75E	8	2097 I'll Be Waiting

Footer information: F13=InsLine F14=DelLine F15=DupLine F16=ACTION F17=MrkBox F18=MrkLine F19=SPLTJOIN F20=BoxFuncs F22=UNDO F23=REDO F24=ResetBox Te | Line=1 | Col=1 | Alt=0,0;1 | Size=343 | Recl=32752 | Fmt=U | Files=4 | Views=4 | 2014/05/23 11:33:05

Figure xx. SELCOPYi - Cover shot.

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# Documentation Notes

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**Seventh Edition, August 2017**

Information in this document details general features and functionality of the **SELCOPY Product Suite 3.40** component, **SELCOPYi**.

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The following publications for SELCOPY Product Suite and its component products are available in Adobe Acrobat PDF format at CBL web page <http://www.cbl.com/selcdoc.html>:

- SELCOPY Product Suite Customisation Guide
- SELCOPY User Manual
- CBLVCAT User Manual
- SELCOPYi Reference and User Guide
- SELCOPYi Text Editor (CBLe) Manual
- SELCOPYi Structured Data Editor Manual
- SELCOPYi Training Material Manual

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**VSE** - z/VSE, VSE/ESA, VSE/SP, DOS.

**CMS** - z/VM, VM/ESA, VM/XA, VM/SP.

**All** - All MVS, VSE and CMS operating systems.

# Summary of Changes

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The **SELCOPYi** Training material and documentation were introduced for Release 3.10 in PTF RS00021.

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## First Edition (2012/12/14)

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### Option 2 - Data Edit

- ◊ *The SDE Edit/Browse Entry Panel*
- ◊ *Display Modes*
- ◊ *LAYOUT Command*
- ◊ *Scrolling the Display to a specific field/record*
- ◊ *Selecting/Ordering Visible Fields*
- ◊ *Adjusting Field Display Column-widths*
- ◊ *Using FIND, EXCLUDE and ONLY commands*
- ◊ *Using CHANGE commands*
- ◊ *Filtering records using ALL(WHERE)/MORE/LESS commands*
- ◊ *Using a FILTER to Select Records on Load*
- ◊ *Working with Multiple Record-Types*
- ◊ *Creating a Structured Data Object (SDO)*
- ◊ *Modifying Data*
- ◊ *Working with Segmented Records*

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## Second Edition (2013/01/31)

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### Option 5 - File Copy/Reformat

- ◊ *The File Copy/Reformat (FCOPY) Panel*
- ◊ *Copying a Standard Sequential Dataset*
- ◊ *Copying PDS/PDSE Library members*
- ◊ *Record Selection*
- ◊ *Specifying Start Record / Number of Records to Copy*
- ◊ *Browse the Output File (F11)*
- ◊ *Using a FILTER to Select Records for Copy*
- ◊ *Browse Output File*
- ◊ *Specifying brackets in the FILTER expression.*
- ◊ *Generate FCOPY primary command*
- ◊ *Modify/Execute Generated FCOPY primary command*
- ◊ *Reformat*
- ◊ *Create Output Copybook*
- ◊ *Updating the Output Copybook*
- ◊ *Force Recompile of Updated Output Copybook*
- ◊ *Running File Copy Reformat in Batch*

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## Third Edition (2013/02/27)

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### Option 6 - File Search/Update

- ◊ *The File Search/update (FSU) Panel*
- ◊ *Searching a PDS/PDSE Library*
- ◊ *Search Report Output (Standard 80-column Screen Width)*
- ◊ *Displaying Additional Hit Information Fields*
- ◊ *Using F6 to edit the Hit File/Record*
- ◊ *Adjusting Report Table View*
- ◊ *Selecting Library Members for Search/Update*
- ◊ *Condensing Selected Members by Timestamp/Size/Userid*
- ◊ *Condensing Selected Members using FIND*
- ◊ *Condensed Member Selection List*
- ◊ *Condensed Member Search Results*

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## Fourth Edition (2013/10/09)

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Updated to reflect SELCOPYi Rel 3.20 revised Function Key defaults.

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## Fifth Edition (2014/09/23)

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### Option 1 - Text Edit

- ◊ *Function keys, shortcuts and convenience features*
- ◊ *UNDO/REDO*
- ◊ *Multiple (windowed) views*
- ◊ *Marked Line- and Box-block features*
- ◊ *String Coloring*

### Option 12 - DB2

- ◊ *Setting up sample DB2 Tables*
- ◊ *Display of DB2 Table detailed Information (INFO)*
- ◊ *DB2 Table Edit*
- ◊ *Editing selected table rows (using the "WHERE" dialog)*
- ◊ *Editing Related Tables (REDIT)*
- ◊ *Generating CSV or XML from selected table rows/columns*
- ◊ *Handling Relational Constraint Errors*

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## Sixth Edition (2015/01/19)

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SELCOPYi Rel 3.30 (cover change only).

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## Seventh Edition (2017/08/22)

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SELCOPYi Rel 3.40.

### Option 8.1 - SELCOPY/debug

- ◊ *Locate Sample SELCOPY JCL*
  - ◊ *The SELCOPY/debug Menu*
  - ◊ *SELCOPY/debug Operation*
-



# Setup Training Material

Sample data files and COBOL/PL1 copybooks are supplied with the SELCOPYi program.

To create your own personal copies of these datasets, allowing you to follow the training manual in real time, select option **T** from the SELCOPYi Primary Option Menu.

```
SELCOPY/i - Primary Option Menu
File SwapList Window Help QuickRef      wS wR
Command>                                Scroll> Csr
ZZSGPRIM                                Lines 1-22 of 22

0 Settings          Set SELCOPY/i options          User: USER123
1 Text Edit         Edit/View small text-type files Version: 3.20
2 Data Edit         Edit/Browse potentially large data files Date: 2013/11/06
3 List             List Volumes,VTOCs,Datasets,Members etc Time: 14:42:01
4 Home             Edit and execute point-and-shoot commands OpSys: z/OS 1.11.0
5 Copy/Reformat     File Copy with optional copybook reformat System: ADCD
6 Search/Update     File Search/Update/Copy/Reformat   VM User: ZOS111
7 Compare          File/Library Compare Utilities
8 Utilities        General utilities
9 Structure        Create structure from copybooks etc
10 Filter          Create record selection filter
11 Print           Print Dataset (Batch)
12 DB2            Work with DB2, browse/edit tables etc
T Training         Setup SELCOPY/i Training Material
WL Window List     Display active windows, select with cursor to switch focus
X Exit            Exit SELCOPY/i

Use F4 (WINDOW) to switch between SELCOPYi display windows.

Use "=" command(+optional fastpath e.g. =3.4) to access this menu/sub-options.

F1=HELP    F2=SPLIT    F4=WINDOW    F9=SWAP    F12=CRETRIEV F14=EXPAND
```

Figure 1. SELCOPYi - Setup SELCOPY/i Training Material.

# Windowed Display System

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Mainframe **z/OS** sessions are typically connected via a **3270 Emulation** package running on the user's PC.

Most users logon to **TSO/ISPF** with one of the following "**standard**" screen sizes:

Model	Rows	Columns
2	24	80
3	32	80
4	43	80
5	27	132

Via their settings, modern 3270 emulators may be configured to run with large "**dynamic**" screen sizes, such as **62 lines by 160 columns**.

**SELCOPYi** takes advantage of large screen sizes by employing a multi-windowed display system.

If you would like to use a large screen for your z/OS (TSO/ISPF) session, configuration is usually very simple, taking only a few minutes. For assistance with your setup please contact CBL ([support@cbl.com](mailto:support@cbl.com)).

Note that **ISPF** restricts screen width to **160 columns**, and requires an update via its own Settings (=0).

```
Terminal Characteristics
Screen format  3  1. Data    2. Std    3. Max    4. Part
```

During this section you will learn how to:

- *Open multiple display windows*
- *Switch focus between open windows*
- *Move windows*
- *Resize windows*
- *Save/Restore favourite dataset window locations*

## Opening Multiple Display Windows

When started with a 3270 screen width of 132 or higher and a screen depth of 32 or higher, SELCOPYi will operate in "windowed" mode, with its **Primary Options Menu** located centralised at the top of the screen by default.

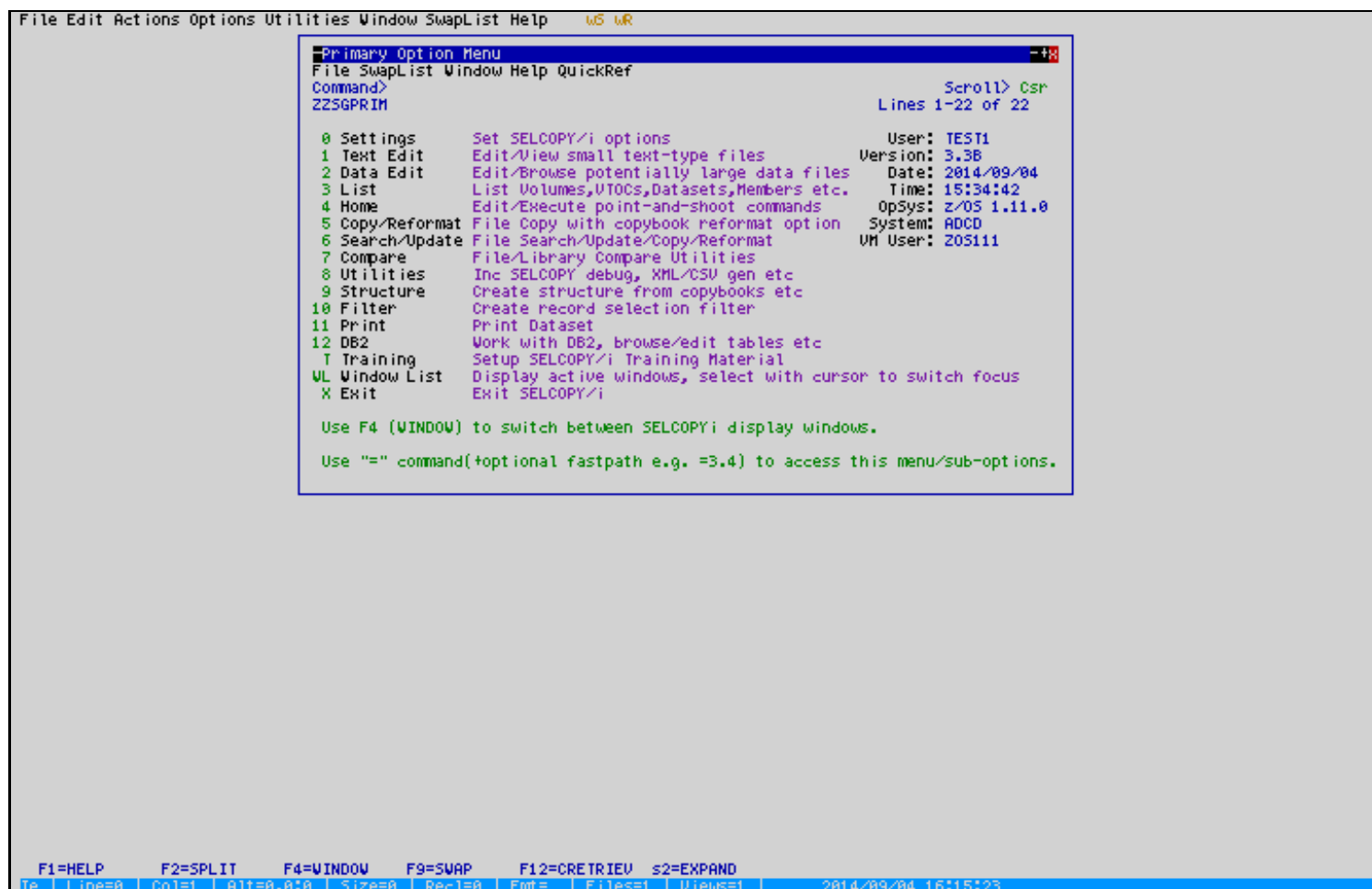


Figure 2. SELCOPYi - POM Window.

## Menu/Panel Windows

Select option **1** to open the **Text Edit** panel in a separate window.

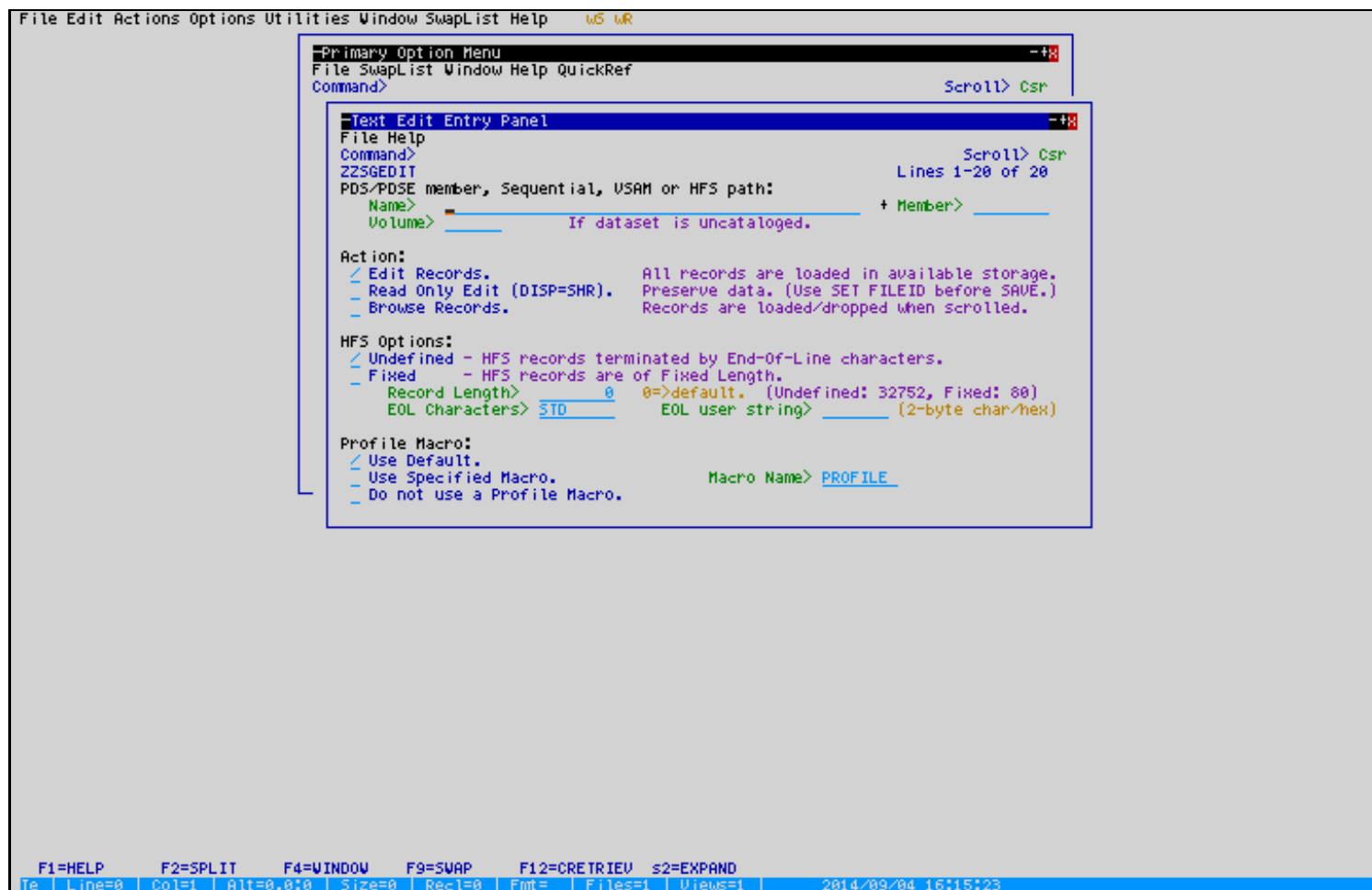


Figure 3. SELCOPYi - Text Edit Panel Window.

## Help (HTML) Windows

Press Function Key **F1** to open the context sensitive **Help** in a further separate window.

Help (HTML) documents are automatically positioned to display right-justified on the screen.

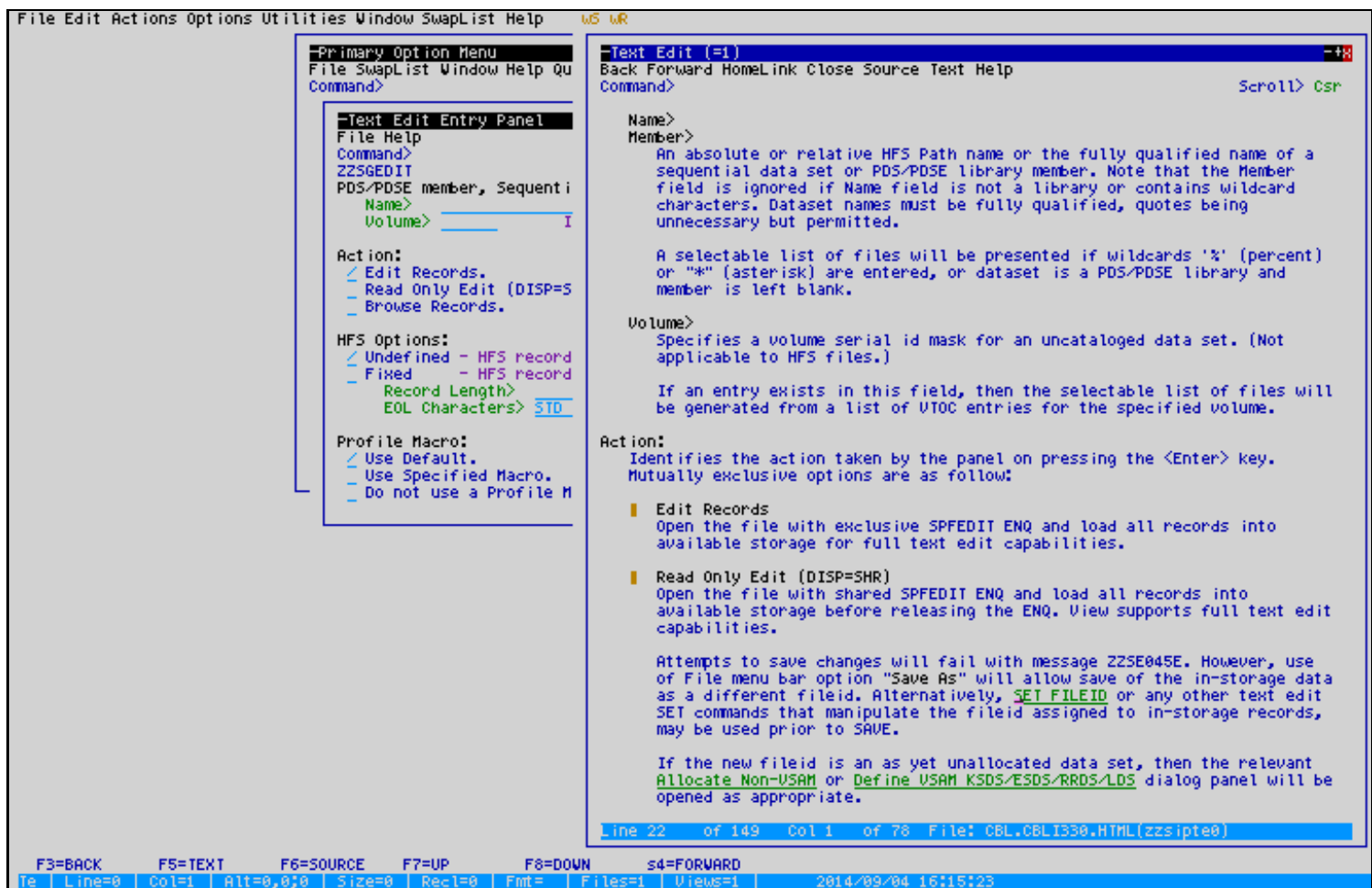


Figure 4. SELCOPYi - Help Window.

## Switching focus between open windows

- The **"focus"** window is indicated by a blue (reverse-video) title-bar.
- Other windows have a white (reverse-video) title-bar. (Shown as black in these screen shots!)
- Only the command-line and input fields of the focus-window are enterable.
- Press the **WINDOW** key (default is **F4**) to switch focus to the **next** window.  
The Primary Options window should now overlay the others as shown below.
- Type "-" (minus-sign) on the command line, then press the **WINDOW** key to switch focus to the **previous** window.

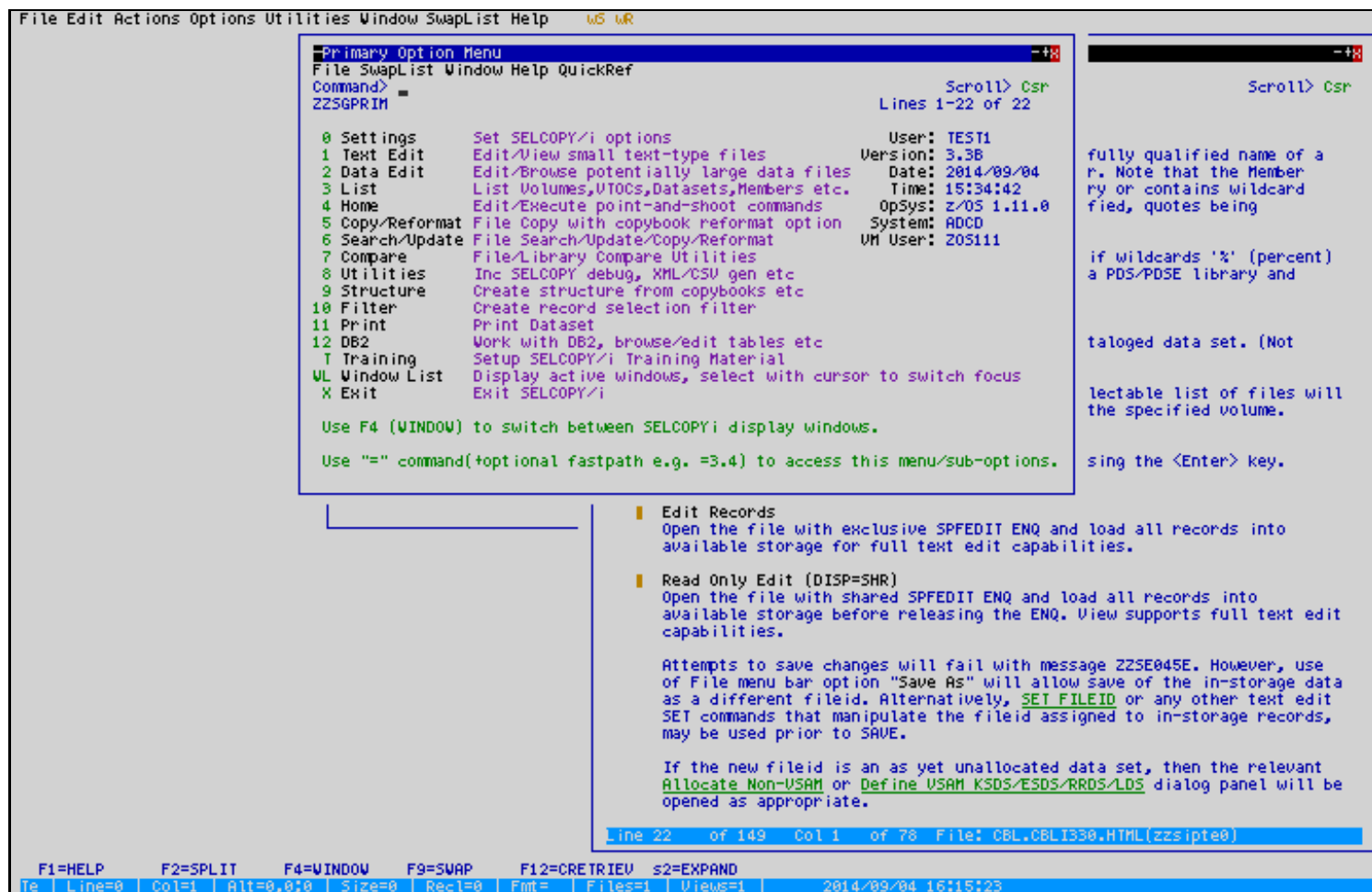


Figure 5. SELCOPYi - Focus Window.

## WindowList (WL) Command

Other ways to switch window focus:

1. Place your cursor on any visible part of a window, then press **ENTER**.
2. Type the **WINDOWLIST (WL)** primary command to display a list of open windows. Place your cursor on the title of a window, then press **ENTER**.

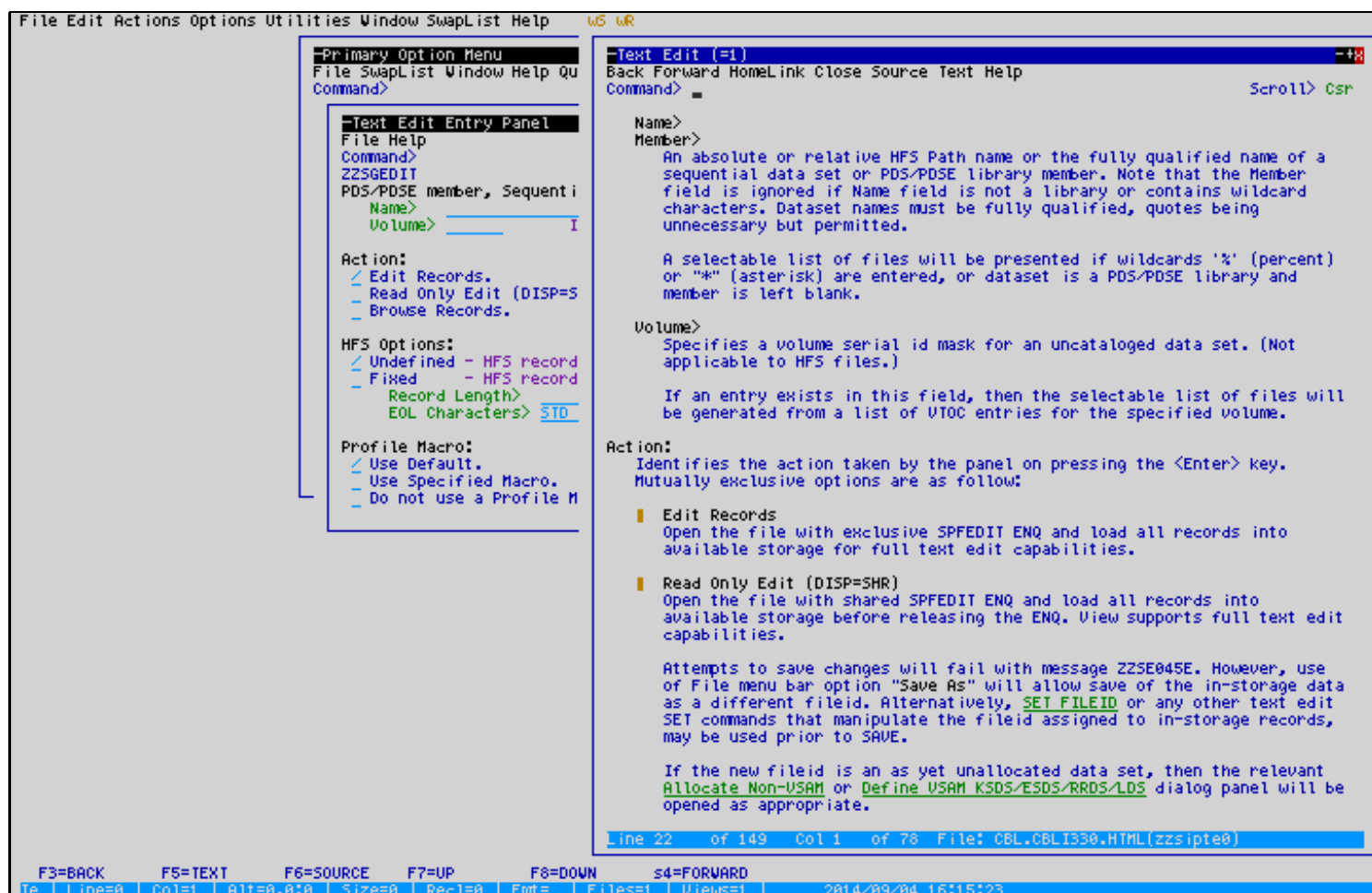
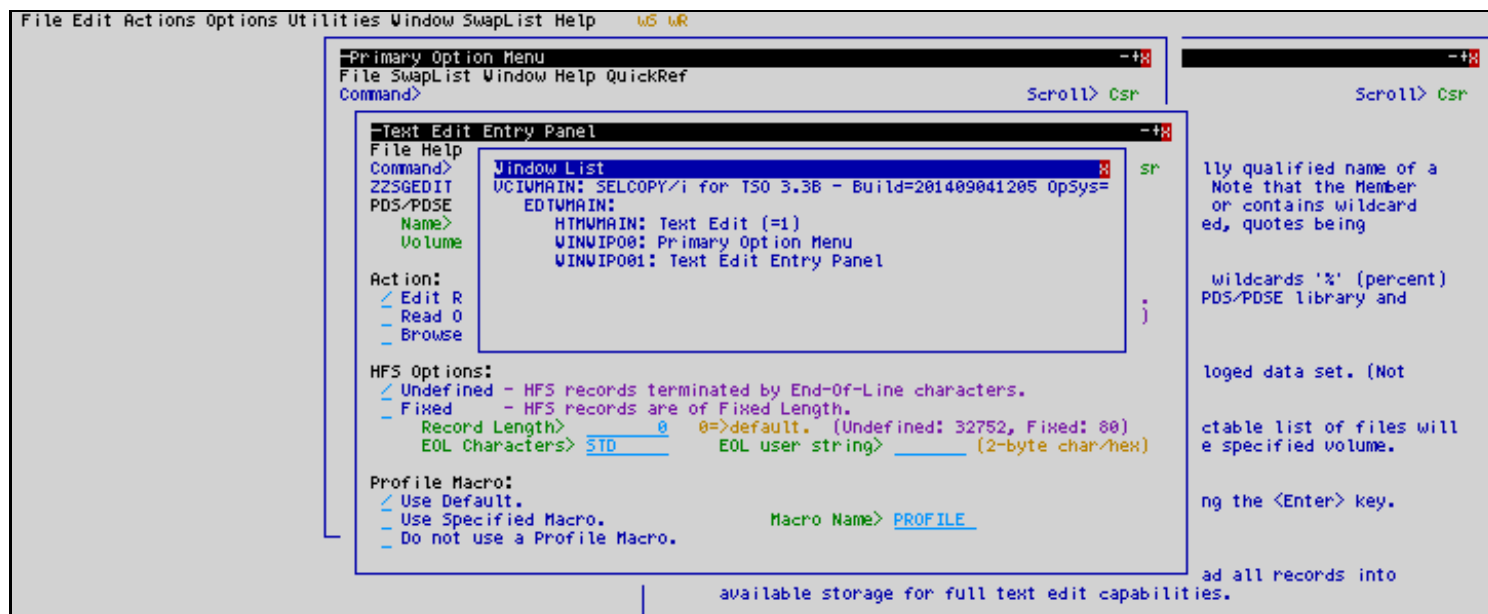


Figure 6. SELCOPYi - Focus Window.

## Moving Windows

- Press **F3** to close the HELP window.
- At the "Text Edit Entry Panel", enter the name of a sample file:
  - ♦ Type **userpfx.SELCTRN.SAM1** in the *Dsn* field, to specify the PDS library containing the supplied COBOL copybook.
  - ♦ Type **ZZST1CPC** in the *Member* field.
- Press **ENTER** to edit the sample COBOL copybook.

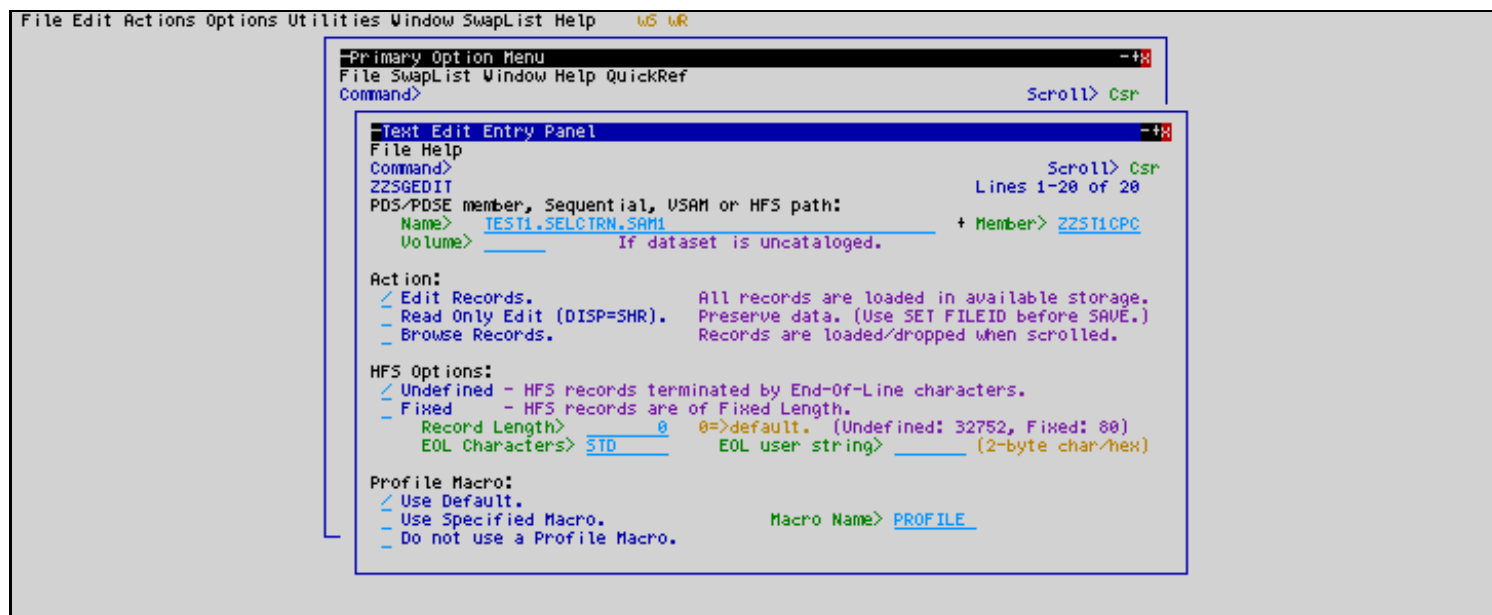


Figure 7. SELCOPYi - Focus Window.

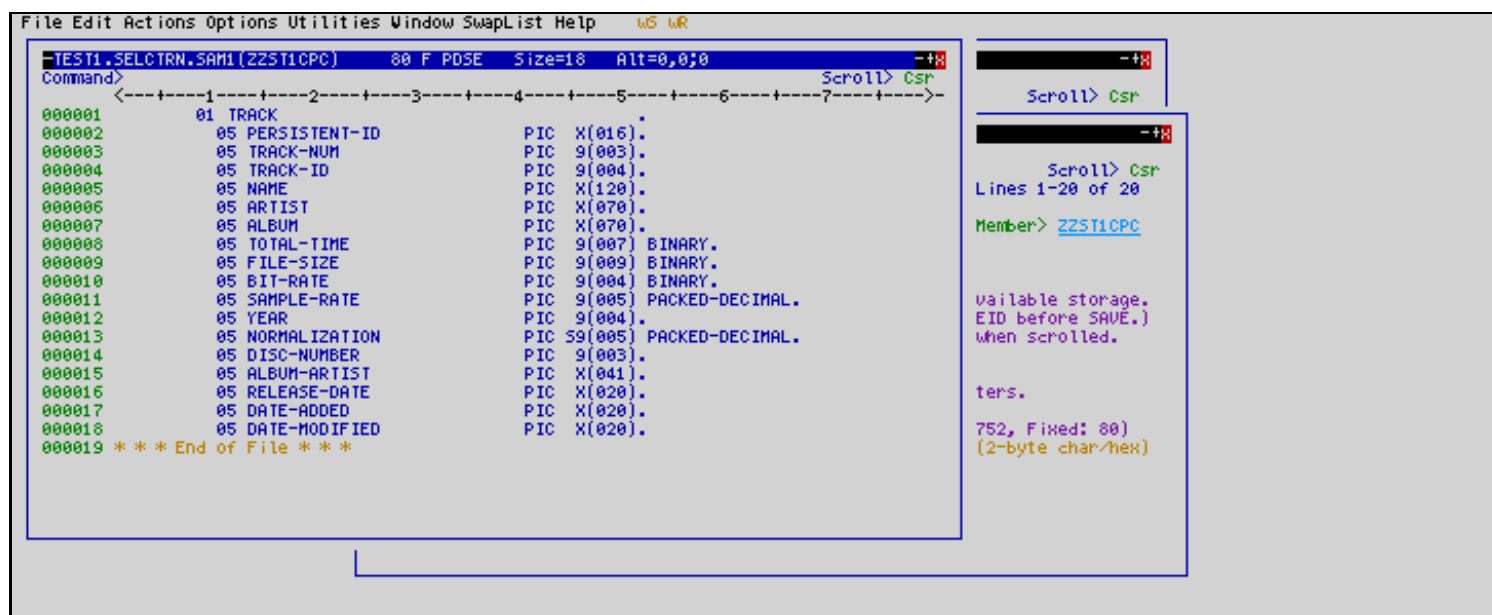


Figure 8. SELCOPYi - Focus Window.



## Moving Windows (2)

- Move the cursor anywhere into the window **"Title-Bar"** then press **ENTER**.  
Note: The "Title-Bar" is the thick block (either blue or white) at the top of each window normally which contains some text to identify the window. For edit-type windows, this will be the name of the file displayed. For other windows it will have an identifying title e.g. "Primary Option Menu".
- The window title-bar and borders will be highlighted in reverse-video.
- This indicates that the window is in move/resize pending state.
- Move the cursor elsewhere on the SELCOPYi "Desktop", then (and only then!) press **ENTER** again.
- The window will be moved to your desired location.

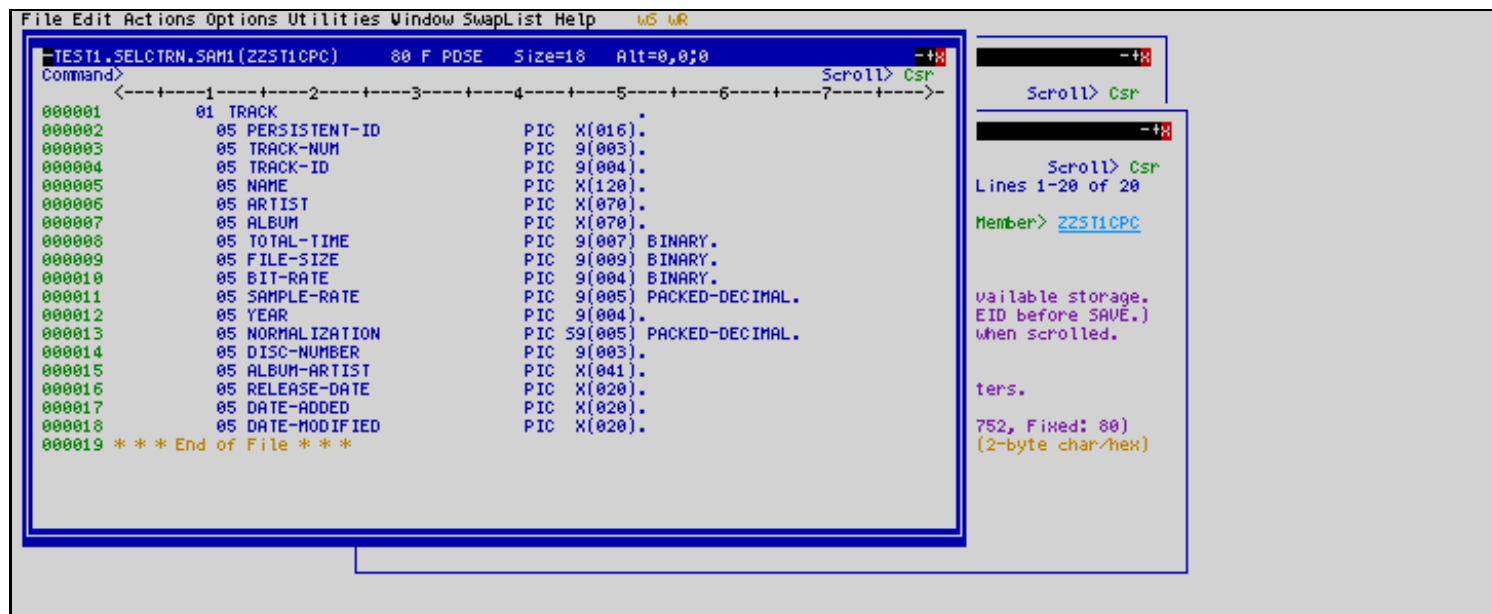


Figure 9. SELCOPYi - Focus Window.

## Dragging Windows

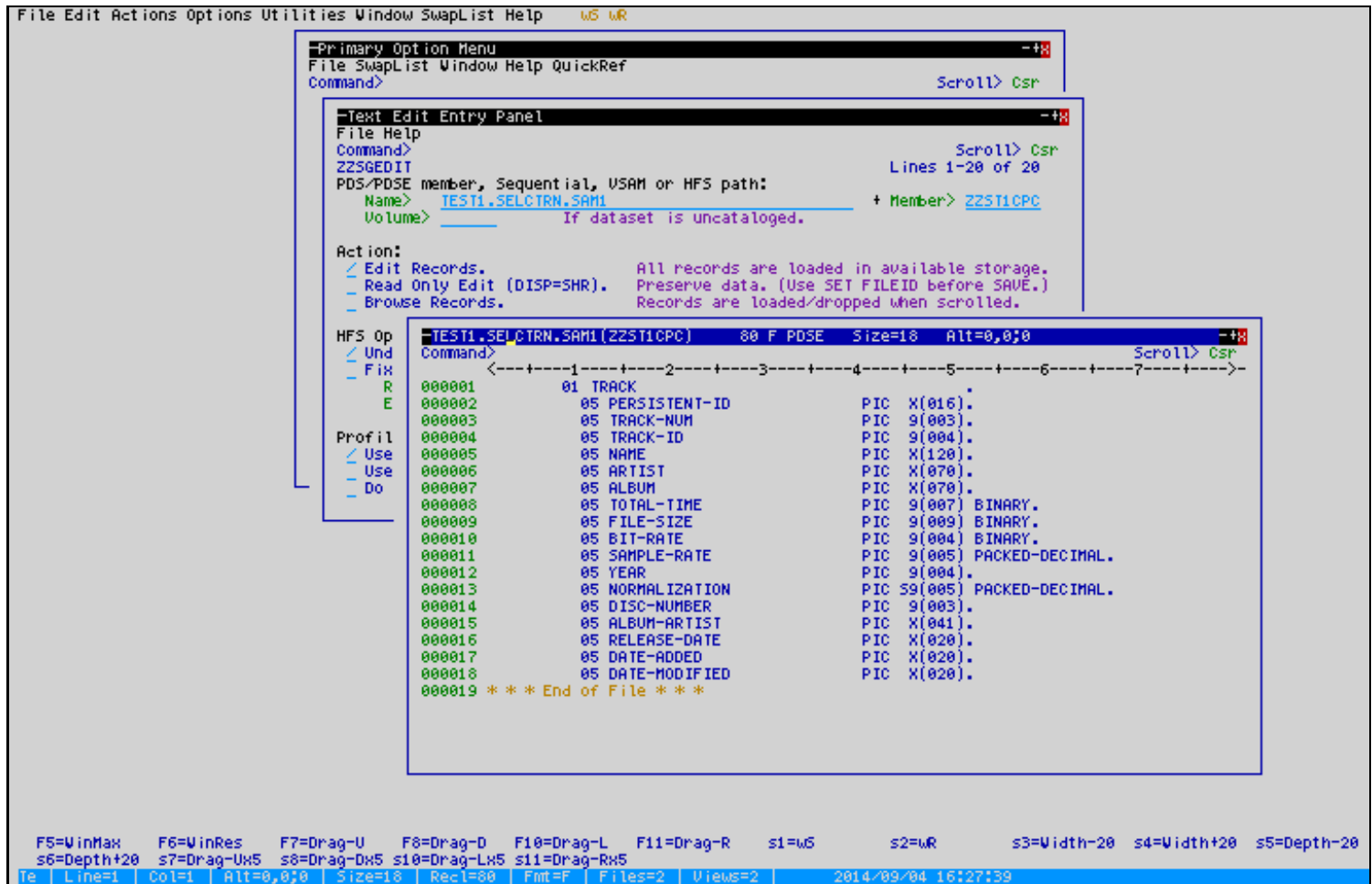


Figure 10. SELCOPYi - Focus Window.

With the cursor in the window title-bar:

- Press function key **F7** to "drag" the window **up 1** position.
- Press function key **F8** to drag the window **down 1** position.
- Press function key **F10** to drag the window **left 1** position.
- Press function key **F11** to drag the window **right 1** position.
- In combination with any of the above, simultaneously hold down the "Shift" key to drag the window **5** positions instead of 1.

## Top/Bottom/Left/Right Justification of Windows

With the cursor in the window title-bar or on any of the borders:

- Press function key **F5** to move the window to the **very top** of the screen. Press **F5** again to move it to the **very bottom** of the screen. i.e. **F5** will toggle the window location between being top and bottom justified without altering it's width or depth.
- Similarly you may press function key **F6** to move the window to the **very left** of the screen. Pressing **F6** again moves it to the **very right** of the screen. i.e. **F6** will toggle the window location between being left and right justified without altering it's width or depth.

## Resizing Windows

- Move the cursor anywhere into the window top **"Border"** then press **ENTER**.  
Note: The "Border" is the thin unbroken blue line surrounding each window.
- The window title-bar and borders will be highlighted in reverse-video.
- This indicates that the window is in move/resize pending state.

The screenshot shows a windowed display system with the following components:

- Primary Option Menu:** File SwapList Window Help QuickRef. Command> Scroll> Csr.
- Text Edit Entry Panel:** File Help. Command> Scroll> Csr. Lines 1-20 of 20. PDS/PDSE member, Sequential, VSAM or HFS path: Name> TEST1.SELCTR.N.SAM1 + Member> ZZST1CPC. Volume> If dataset is uncataloged. Action: / Edit Records. All records are loaded in available storage. / Read Only Edit (DISP=SHR). Preserve data. (Use SET FILEID before SAVE.) / Browse Records. Records are loaded/dropped when scrolled.
- TEST1.SELCTR.N.SAM1 (ZZST1CPC):** 80 F PDSE Size=18 Alt=0,0;0. Command> Scroll> Csr. The data is displayed in a table format with columns 1 through 7.

At the bottom, there is a status bar with the following information:

F5=WinMax F6=WinRes F7=Drag-U F8=Drag-D F10=Drag-L F11=Drag-R s1=w5 s2=wR s3=Width-20 s4=Width+20 s5=Depth-20  
s6=Depth+20 s7=Drag-Ux5 s8=Drag-Dx5 s10=Drag-Lx5 s11=Drag-Rx5  
Te Line=1 Col=1 Alt=0,0;0 Size=18 Recl=80 Fmt=F Files=2 Views=2 2014/09/04 16:27:39

Figure 11. SELCOPYi - Focus Window.

## Resizing Windows (2)

- Move the cursor up or down a number of lines, then (and only then!) press **ENTER** again.
- The window depth will grow or shrink as desired.
- This technique may be repeated on the bottom, left or right borders and even the **corners**.

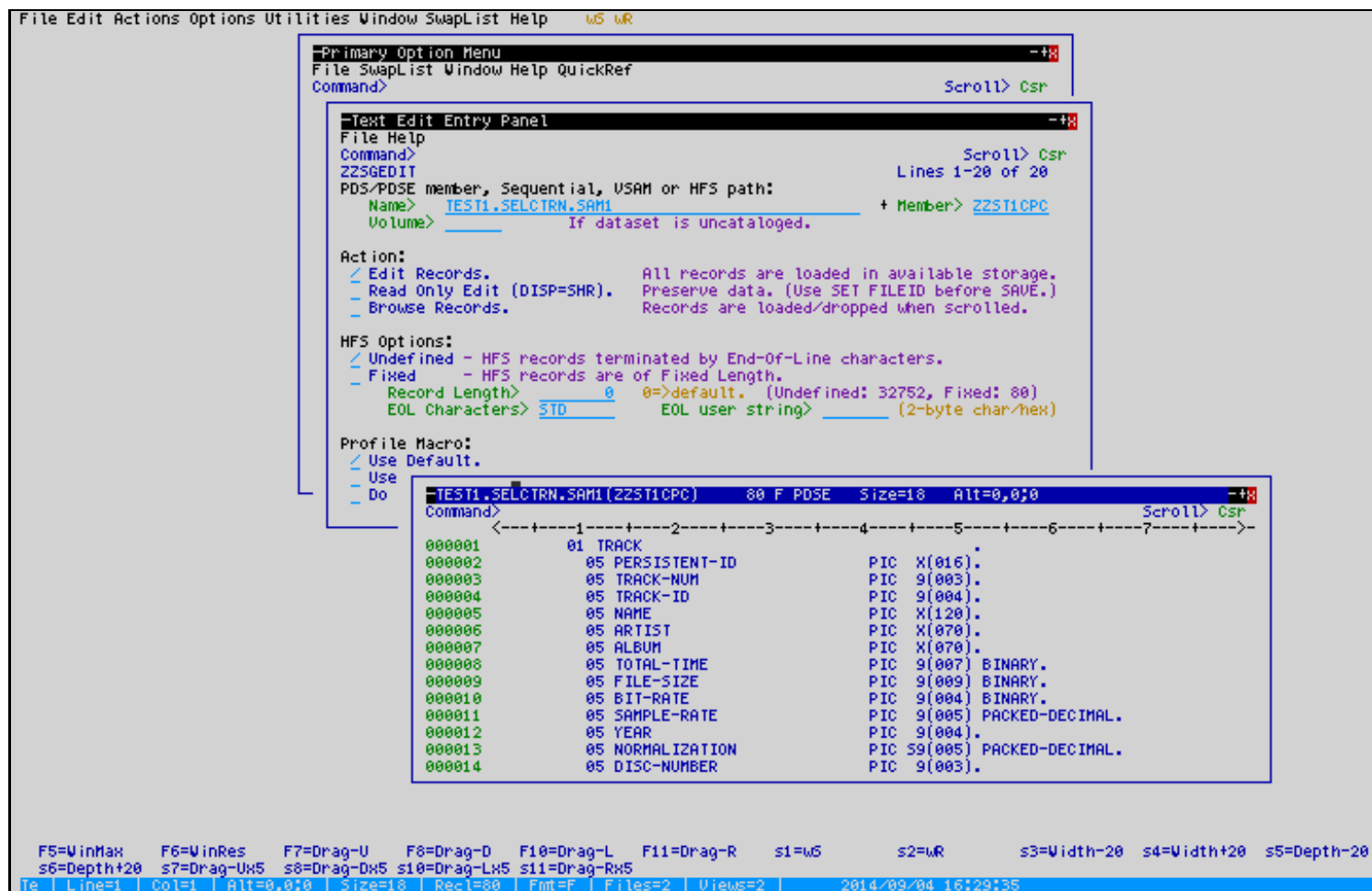


Figure 12. SELCOPYi - Focus Window.

## Dragging Window Borders

With the cursor in the window borders:

- Press function key **F7** to "drag" a horizontal border **up 1** position.
- Press function key **F8** to drag a horizontal border **down 1** position.
- Press function key **F10** to drag a vertical border **left 1** position.
- Press function key **F11** to drag a vertical the border **right 1** position.
- In combination with any of the above, simultaneously hold down the "**Shift**" key to drag the window **5** positions instead of 1.

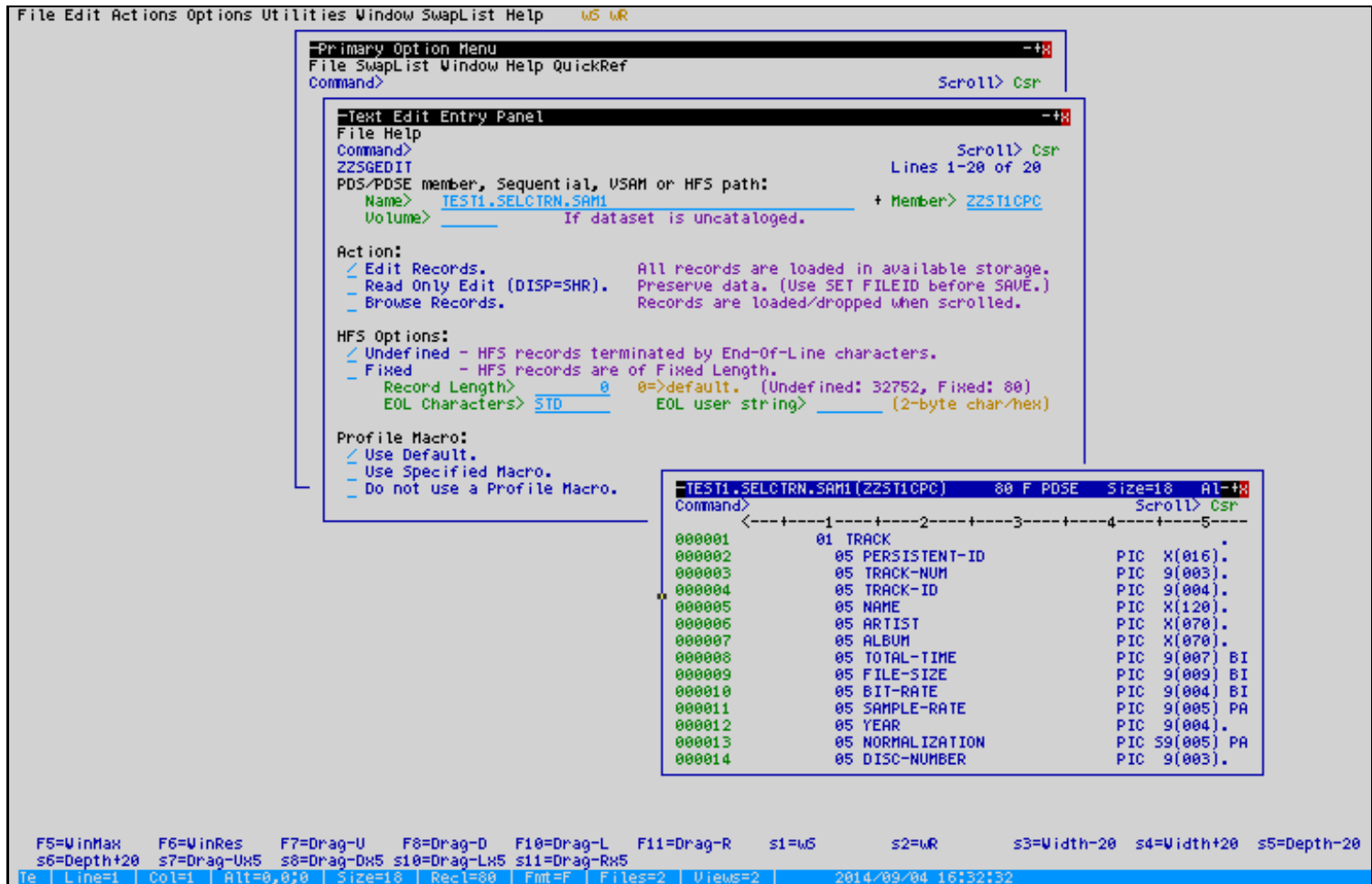


Figure 13. SELCOPYi - Focus Window.

Also with the cursor in either the window borders or title-bar:

- Press function key **Shift-F3** to **decrease the width** by 20.
- Press function key **Shift-F4** to **increase the width** by 20.
- Press function key **Shift-F5** to **decrease the depth** by 20.
- Press function key **Shift-F6** to **increase the depth** by 20.
- Press function key **Shift-F1** to **save** the location.
- Press function key **Shift-F2** to **restore** from a saved location.

**Note:** Window location save/restore (Shift-F1/F2) is supported for Text-Edit and Data-Edit windows. (Menu and panel windows are automatically restored to their previous location).

## Maximise/Minimise

At the right edge of each window's title-bar you will find the minimise (-), maximise (+) and close (x) buttons.

To "press" one of these buttons simply place your cursor on it and hit ENTER.

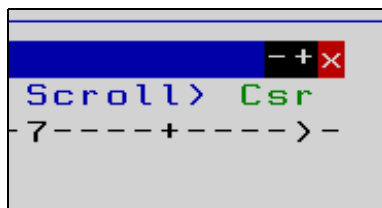


Figure 14. SELCOPYi - Min/Max/Close Buttons.

SELCOPYi also provides another convenient method of switching between window **"maximised"** and **"restored"** state.

- Place the cursor anywhere on either the window "Title-Bar" or "Border"
- Press the **Shift-F12** (F24) key to either maximise or restore the window (depending on its current state).

Note that as soon you maximise any window, then all windows will display in maximised state. Remember, all other open windows are still available, just press the **"Window" key (F4)** to access them.

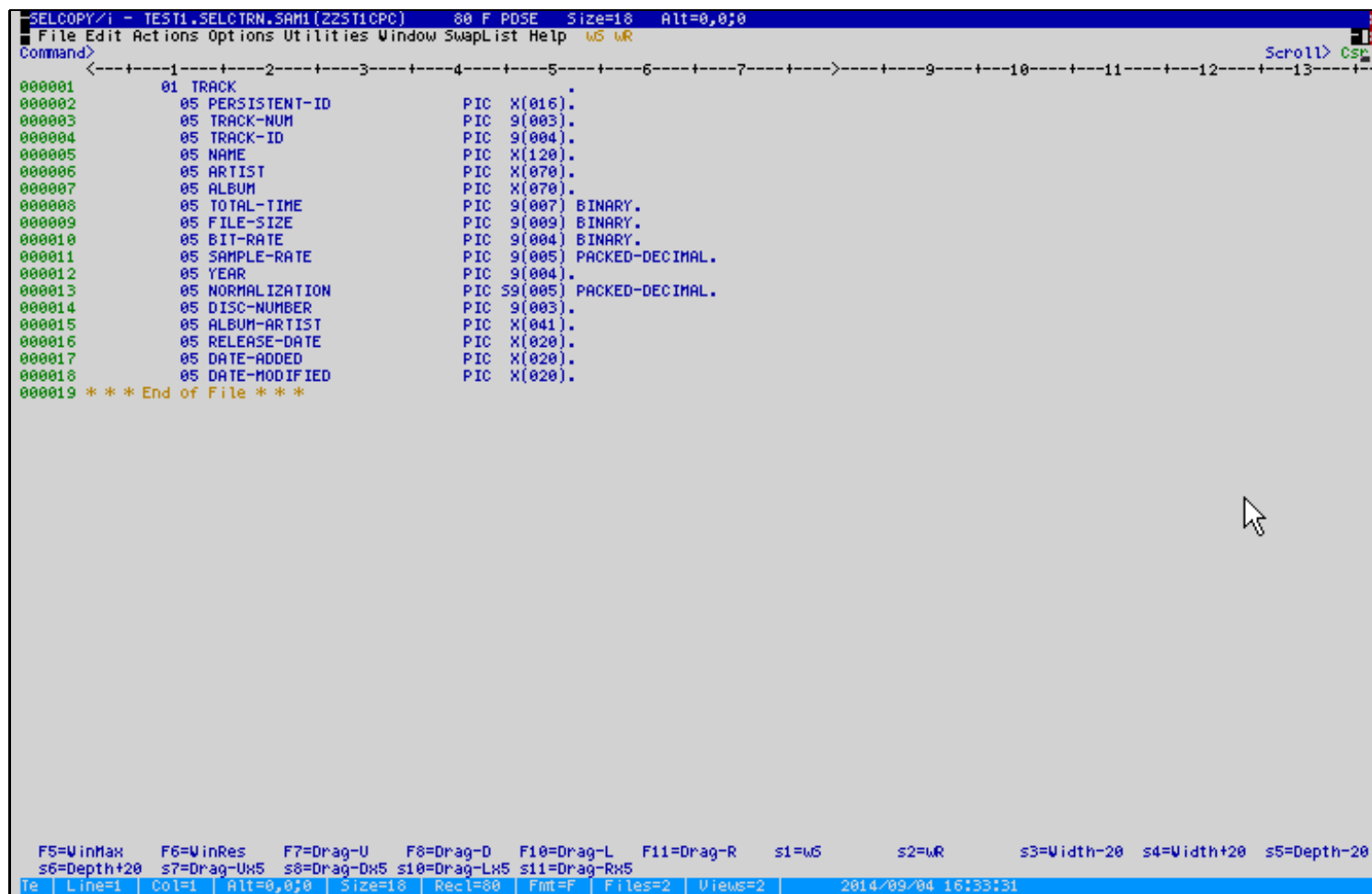


Figure 15. SELCOPYi - Focus Window.

## Maximise/Minimise (2)

In maximised state the maximise button is replaced by the restore (▢) button.

Note that there are now two close (x) buttons displayed one above the other.

The bottom button will close the individual window, while the top one will close the entire SELCOPYi application.

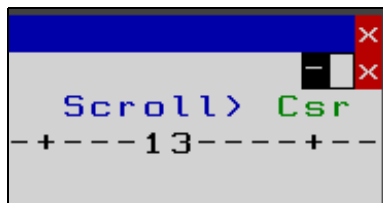


Figure 16. SELCOPYi - Min/Max/Close Buttons.

Minimised windows are displayed at the bottom left of the "desktop".

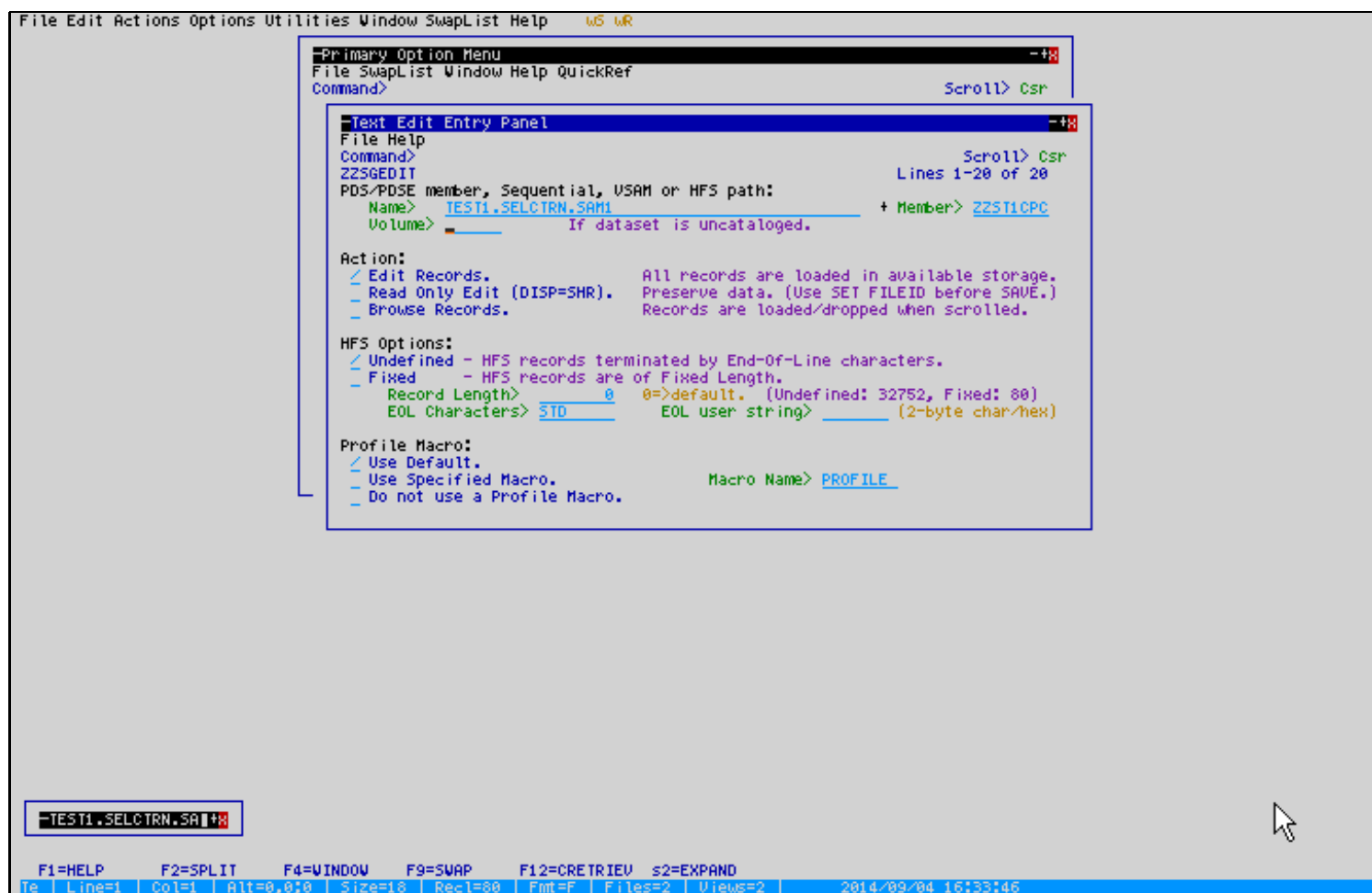


Figure 17. SELCOPYi - Focus Window.

## Option 1 - Text Edit

---

SELCOPYi's own **Text Editor**, while running in ISPF compatibility mode for ease and familiarity, has some significant advantages over the **standard ISPF-Editor**.

The most obvious of these is that it uses the SELCOPYi "**windowed-display**" system providing movable, resizable overlapping views of many files at once. It even allows multiple simultaneous views of the same file.

During this section you will learn about:

- *Function keys, shortcuts and convenience features*
- *UNDO/REDO*
- *Multiple (windowed) views*
- *Marked Line- and Box-block features*
- *String Coloring*



## Function keys, shortcuts and convenience features

Running on z/OS systems, the SELCOPYi Text Editor operates in **ISPF-Edit (ISREDIT)** compatibility mode, meaning that its look and feel is very similar and it supports all the commonly used primary and line commands of the original standard editor.

There are however some differences you should be aware of, as well as some additional features that you may enjoy using.

- Select option **1** to open the **Text Edit** panel.
- At the **"Text Edit Entry Panel"**, enter the name of a sample file that was created for you during the "Setup Training Material" section.
  - ♦ Type **userpfx.SELCTRN.SAM1** in the *Dsn* field, to specify the PDS library containing the sample COBOL copybook.
  - ♦ Type **ZZST2CPC** in the *Member* field.
- Press **ENTER** to edit the library member.

```

SELCOPY/i - TEST1.SELCTRN.SAM1(ZZST2CPC) 80 F PDSE Size=59 Alt=0,0;0
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001      01 ARTIST
000002          05 RT                      PIC X(001).
000003          05 ARTIST                  PIC X(070).
000004      01 ALBUM
000005          05 RT                      PIC X(001).
000006          05 ALBUM                  PIC X(070).
000007      01 TRACK
000008          05 RT                      PIC X(001).
000009          05 PERSISTENT-ID          PIC X(016).
000010          05 TRACK-NUM             PIC 9(003).
000011          05 TRACK-ID              PIC 9(004).
000012          05 NAME                   PIC X(120).
000013          05 TOTAL-TIME             PIC 9(007) BINARY.
000014          05 FILE-SIZE              PIC 9(009) BINARY.
000015          05 BIT-RATE               PIC 9(004) BINARY.
000016          05 SAMPLE-RATE           PIC 9(005) PACKED-DECIMAL.
000017          05 YEAR                   PIC 9(004).
000018          05 NORMALIZATION          PIC 9(005) PACKED-DECIMAL.
000019          05 DISC-NUMBER            PIC 9(003).
000020          05 ALBUM-ARTIST            PIC X(041).
000021          05 RELEASE-DATE            PIC X(004).
000022              07 RELEASE-YYYY        PIC X(004).
000023              07 FILLER               PIC X(001).
000024              07 RELEASE-MM           PIC X(002).
000025              07 FILLER               PIC X(001).
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1 | Col=1 | Alt=0,0;0 | Size=59 | Recl=80 | Fmt=F | Files=2 | Views=2

```

Figure 18. SELCOPYi - POM Window.

## Inserting, Deleting, Replicating, Splitting and Joining lines

---

- By default, a scale line is provided at the top of the screen that remains permanently visible as you scroll down the file.
- Type **SCALE OFF** to remove it, and **SCALE ON** to restore it.
- You will notice a difference from the standard ISPF editor when you type **"I"** in the prefix area of line 1 to insert a new line.
- Whereas the standard ISPF editor will allow you to type data on the inserted line then press **ENTER** to automatically insert another line, the SELCOPYi Text Editor simply inserts a single line.
- Type **"Inn"** (where nn is a number) in the normal was to insert multiple lines at once.
- While you may, of course, use any of the standard line-commands if you prefer, SELCOPYi provides some convenient default Function Key definitions.
  - ◆ Press **Shift-F1 (F13)** to **insert** new lines (instead of having to move the cursor into the prefix area then enter **I**).
  - ◆ Press **Shift-F2 (F14)** to **delete** the current line (instead of having to move the cursor into the prefix area then enter **D**).
  - ◆ Press **Shift-F3 (F15)** to **replicate** the current line (instead of having to move the cursor into the prefix area then enter **R**).
  - ◆ Press **Shift-F7 (F19)** to split a line so that text following the cursor is removed from the current and inserted as a new line.
  - ◆ Place your cursor at the end of a line then use the same key (**SPLTJOIN**) to join on text from the next line.

## Function Key Options

---

- Type the **PFS (PFSHOWSTYLE)** primary command to control the way Function Keys **F13-F24** are displayed at the bottom of the screen.

Type **HELP PFS** for more information on how to get "**F13**" to display as "**s1**" (denoting Shift-F1) etc as shown in the following screen shots.

This feature may also be set via the Settings->Function Keys (=0.8) panel.

- In addition, users running with the recommended large 160 column screens width (e.g. 62 lines x 160 cols) will find it handy to use the **PFSHOW ALL** option.

The benefit of this being that function keys 1-12 are always displayed on the first line, with the corresponding "Shift" keys (F13-F24) directly underneath. Keys that are not set to any command will still occupy the relevant slot thereby maintaining the up/down alignment of standard/shift keys.

Again, this feature may also be set via the Settings->Function Keys (=0.8) panel.

- Just like under standard ISPF, you may type **KEYS** to display a dialog that allows view and modification of the current function "KeyList".

Most SELCOPYi utilities have their own independent key list. e.g. The KeyList for the Text-Edit utility (in ISPF compatibility mode) is called "TEXTEDIT" and for the Data-Edit it's called "DATAEDIT".

Changes made to key definitions using this panel are permanent.

Press the **HELP (F1)** key for more information.

- Unlike ISPF, you may also make temporary key definitions that are individual to the current Text-Edit window (the feature is also available for Data-Edit and any other type of window).

To temporarily modify a key definition just type the primary command **PF** followed by the number of the key (e.g. **6** to modify F6, or **21** to modify Shift-F9) followed by the text of the command to be executed when the key is pressed.

e.g. **PF 1 SAVE**

## Selective Line Editing

- SELCOPYi supports the primary command **ONLY (O)** as a shortcut to EXCLUDE/FIND.
- Type **ONLY 'X' 46** to display only the lines containing letter 'X' in column 46.

In the standard ISPF editor you would need to type two commands.

1. **X ALL** to exclude all lines.
2. **FIND ALL 'X' 46** to show only the required lines.

- Type the primary command **HIDE** to remove the display of "shadow" lines representing excluded records.
- Type **RES HIDE** (or SHAD ON) to redisplay shadow lines.
- Type **ALL** (or RES) to redisplay excluded lines.

**Tip:** Using the **KEYS** dialog, choose a Function key that you're willing to sacrifice (e.g. F6=RFIND) then define it as

**ALL; SOS MAKECURR.**

(Use of the command separator character (semi-colon) allows chaining together of multiple commands to be executed with a single key depression.)

Then, following an **ONLY** command to select records of interest, you may place your cursor on a particular record and press **F6** (or whichever key you chose) to redisplay any excluded lines (**ALL**) and at the same time scroll the focus record to the top of the screen (**SOS MAKECURR**).

Note that after pressing F6 to explore an interesting area of your file, provided you make no changes in that area, you may wish to press the **UNDO** key (**Shift-F10**) to reverse the **ALL** command, in effect reapplying all the line exclusions set by your previous **ONLY** command.

See later discussion on the **UNDO/REDO** feature.

```
SELCOPY/i - TEST1.SELCTRN.SAM1(ZZST2CPC) 80 F PDSE Size=59 Alt=0,0;3
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
ZZSE195I 44 occurrences of string "X" were found.
000000 * * * Top of File * * *
000001 ----- 1 line(s) not displayed -----
000002          05 RT                      PIC X(001).
000003          05 ARTIST                 PIC X(070).
000004 ----- 1 line(s) not displayed -----
000005          05 RT                      PIC X(001).
000006          05 ALBUM                  PIC X(070).
000007 ----- 1 line(s) not displayed -----
000008          05 RT                      PIC X(001).
000009          05 PERSISTENT-ID          PIC X(016).
000010 ----- 2 line(s) not displayed -----
000012          05 NAME                   PIC X(120).
000013 ----- 7 line(s) not displayed -----
000020          05 ALBUM-ARTIST            PIC X(041).
000021 ----- 1 line(s) not displayed -----
000022          07 RELEASE-YYYY           PIC X(004).
000023          07 FILLER                  PIC X(001).
000024          07 RELEASE-MM             PIC X(002).
000025          07 FILLER                  PIC X(001).
000026          07 RELEASE-DD             PIC X(002).
000027          07 FILLER                  PIC X(001).
000028          07 RELEASE-HH             PIC X(002).
000029          07 FILLER                  PIC X(001).
000030          07 RELEASE-MN             PIC X(002).
000031          07 FILLER                  PIC X(001).
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=0 | Col=1 | Alt=0,0;3 | Size=59 | Recl=80 | Fmt=F | Files=2 | Views=2
```

Figure 19. SELCOPYi - Text Edit Panel Window.

## Displaying HEX Data

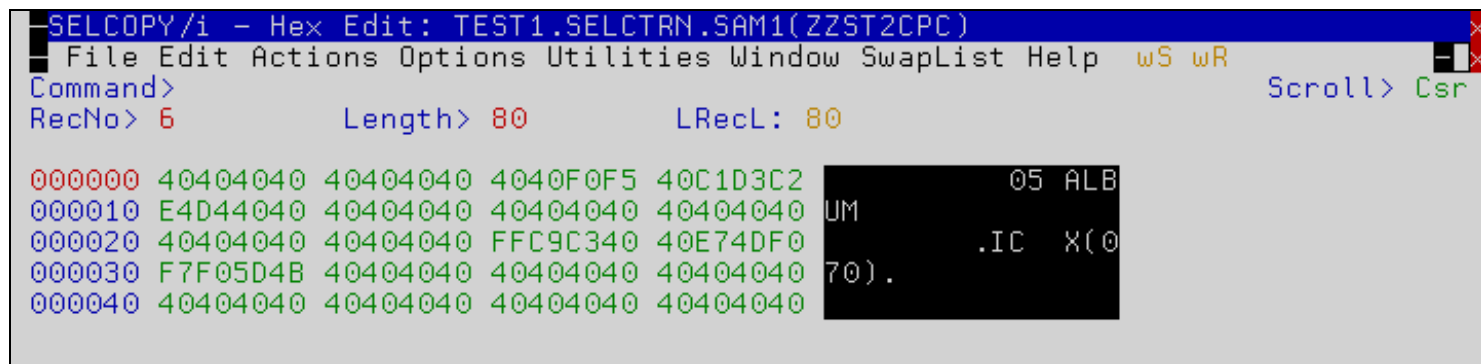
- Just like in the standard ISPF-Editor, you may type the primary command **HEX ON/OFF** to display the hexadecimal representation of each text line.
- In addition the SELCOPYi text-editor supports the **HEX** line-command which opens a separate "dump" style storage display for the focus line.

If you are operating in windowed display mode you'll notice this display appears in a separate window.

Multiple dump windows may be opened for several different lines.

- Enter the **HEX** line-command in the prefix area of line 6.
- Now modify the data at offset **X'28'** from **X'D7'** (c'P') to **X'FF'** and press ENTER.

You should see the screen shot below.



```

SELCOPY/i - Hex Edit: TEST1.SELCTRN.SAM1(ZZST2CPC)
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
RecNo> 6          Length> 80          LRecL: 80          Scroll> Csr

000000 40404040 40404040 4040F0F5 40C1D3C2 05 ALB
000010 E4D44040 40404040 40404040 40404040 UM
000020 40404040 40404040 FFC9C340 40E74DF0 .IC X(0
000030 F7F05D4B 40404040 40404040 40404040 70).
000040 40404040 40404040 40404040 40404040
  
```

Figure 20. SELCOPYi - Hex Edit Window.

## Non-Display Characters

- Now press **F3** to close the hex-dump window.  
You should see the screen shot below.
- Notice that the colour of the modified line has changed to **(TURQUOISE) UNDERSCORE**.

This is to alert the user to the presence of non-display characters within the visible text.

- Display characters are overtypable, and are indicated by the **underscore**.

**Non-display** characters (e.g. 'X'FF') are **protected** from input using a 3270 attribute byte which displays as blank **without** an underscore.

- You can type the primary command **NOND** to toggle this feature on or off.

```

SELCOPY/i - TEST1.SELCTRN.SAM1(ZZST2CPC) 80 F PDSE Size=59 Alt=1,1;3
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001 01 ARTIST
000002 05 RT PIC X(001).
000003 05 ARTIST PIC X(070).
000004 01 ALBUM
000005 05 RT PIC X(001).
000006 05 ALBUM IC X(070).
000007 01 TRACK
000008 05 RT PIC X(001).
000009 05 PERSISTENT-ID PIC X(016).
000010 05 TRACK-NUM PIC 9(003).
000011 05 TRACK-ID PIC 9(004).
000012 05 NAME PIC X(120).
000013 05 TOTAL-TIME PIC 9(007) BINARY.
000014 05 FILE-SIZE PIC 9(009) BINARY.
000015 05 BIT-RATE PIC 9(004) BINARY.
000016 05 SAMPLE-RATE PIC 9(005) PACKED-DECIMAL.
000017 05 YEAR PIC 9(004).
000018 05 NORMALIZATION PIC 9(005) PACKED-DECIMAL.
000019 05 DISC-NUMBER PIC 9(003).
000020 05 ALBUM-ARTIST PIC X(041).
000021 05 RELEASE-DATE
000022 07 RELEASE-YYYY PIC X(004).
000023 07 FILLER PIC X(001).
000024 07 RELEASE-MM PIC X(002).
000025 07 FILLER PIC X(001).
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1 | Col=1 | Alt=1,1;3 | Size=59 | Recl=80 | Fmt=F | Files=2 | Views=2

```

Figure 21. SELCOPYi - Focus Window.

---

## UNDO/REDO

---

SELCOPYi supports multi-level **UNDO** and **REDO** of changes made during your Text-Edit sessions.

UNDO/REDO is file independent, meaning you can be editing and changing many files within your SELCOPYi session, each of which may have their changes separately undone/redone.

To demonstrate this feature, first use the features described earlier to insert, delete, replicate, split and join lines of text in our sample COBOL copybook, then ...

- Press Function Key **F22 (Shift-F10)** repeatedly to **UNDO** each of the changes 1 at a time.
- Press Function Key **F23 (Shift-F11)** repeatedly to **REDO** each of the undone changes.

The UNDO/REDO feature is unaffected by the **SAVE** command.

Type **HELP UNDOING** for full information on how to configure this feature.

## Multiple (Windowed) views

Whether running in windowed display mode (on a large screen) or not, the SELCOPYi Text-Editor supports multiple views of any edited dataset.

To demonstrate this we'll edit a second slightly larger file.

- Type the primary command "=" to display (or return focus to) the SELCOPYi **Primary Options Menu**.

If you are running on a standard screen size it is worth noting that this action does not close any of the "windows" we have already seen. Press the **WINDOW** key (F4) to scroll through each of the open windows.

- From the **Primary Options Menu** select option **4** to edit your "**HOME**" file, which will be discussed in more detail later in this section.

Alternatively you may type the **HOME (HO)** primary command to directly edit this special file.

- Type **M** on the command line and press Function Key **F8** to scroll to the bottom of this file.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=132      Alt=0,0;1
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>                               Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
.WIN          ** Windowed Display System          *** .win
000080  While running on a wide (greater than 80-char) screen, SELCOPYi
000081  will automatically operate in a windowed display mode.
000082
000083  All SELCOPYi display-windows may then be moved, resized, maximised,
000084  minimised and restored in a fashion similar to those on your PC.
000085
000086  This is achieved by 'clicking' the window-borders, title-Bar
000087  or '-+x' buttons.
000088      (Clicking means move-cursor, then hit-ENTER.
000089      'Try setting your Mouse to do this!' )
000090  Grab the window-border with the first click, move cursor to a new
000091  location, second click reshapes the window. Try it now!
000092
000093  Also try 'dragging' using the scrolling keys 'F7/F8' and 'F10/F11'.
000094  To drag at '5 x speed', just hold down the 'shift' key.
000095
000096
000097  Having found your perfect window size/shape/position for a
000098  particular file, you may wish to 'Save' its characteristics,
000099  allowing 'Restore' in this and future sessions.
000100
000101  Use the yellow 'wS' and 'wR' buttons in the main menu bar, or
000102  the following primary commands.
000103  <WinX Save      | Save current window size/pos - Same as 'wS' button.
      s1=InsLine   s2=DelLine   s3=DupLine   s4=ACTION   s5=MrkBox   s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO      s11=REDO      s12=ResetBox
Te | Line=79 | Col=1 | Alt=0,0;1 | Size=132 | Recl=32752 | Fmt=V | Files=3 | Vi

```



## Multiple (Windowed) Views (2)

Now imagine you're editing a large program source file and are focused on a point of interest.

You then need to look at other parts of the file, but don't want to lose your current place.

To return to your original location you could use the prefix area to set a line name e.g. **.HERE**, then return to it by typing **LOC .HERE** on the command line.

But SELCOPYi users can just open a 2nd, 3rd, 4th etc view of the file in order to look at other areas, then return to their previous location just by pressing **F3** to close the additional view(s).

To demonstrate ...

- Type the primary command **"WIN NEW"** to open a new view of the current file.
- Type **M** on the command line and press Function Key **F7** to scroll to the top of the file.
- Just press **F3** to close the new view returning to your original location.

```

File Edit Actions Options Utilities Window SwapList Help      wS wR

-TEST1.SELCOPYI.CMX:2      32752 V SEQ      Size=132      Alt=0,0;1      -+x
Command>
      <---+---1---+---2---+---3---+---4---+---5---+---6---+---
000000 * * * Top of File * * *
000001 ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (T
000002
000003          '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').

-TEST1.SELCOPYI.CMX:1      32752 V SEQ      Size=132      Alt=0,0;1      -+x
Command>
      <---+---1---+---2---+---3---+---4---+---5---+---6---+---
.WIN          ** Windowed Display System          *** .win
000080      While running on a wide (greater than 80-char) screen, SELCOPYi
000081      will automatically operate in a windowed display mode.
000082
000083      All SELCOPYi display-windows may then be moved, resized, maximised
000084      minimised and restored in a fashion similar to those on your PC.
000085
000086      This is achieved by 'clicking' the window-borders, title-Bar
000087      or '-+x' buttons.
000088          (Clicking means move-cursor, then hit-ENTER.
000089          'Try setting your Mouse to do this!'

F5=WinMax      F6=WinRes      F7=Drag-U      F8=Drag-D      F10=Drag-L      F11=Drag-R
s1=wS          s2=wR          s3=Width-20  s4=Width+20  s5=Depth-20  s6=Depth+20
s7=Drag-Ux5    s8=Drag-Dx5    s10=Drag-Lx5 s11=Drag-Rx5

Te | Line=0 | Col=1 | Alt=0,0;1 | Size=132 | Recl=32752 | Fmt=V | Files=3 | Vie
  
```

Figure 22. SELCOPYi - Focus Window.

## The "WW" Primary Command

Particularly useful when running in windowed display mode, the "WW" command will perform like "WIN NEW", but will also "clone" the original window's **width** and **depth**.

In addition, "WW" allows you to supply an optional command that wish to be executed in the new view e.g.

- Type the primary command "WW ONLY '<' 1" to open a new view displaying only lines with a less-than sign in columns 1.

```

File Edit Actions Options Utilities Window SwapList Help  wS wR
-TEST1.SELCTRN.SAM1(ZZST2C)  -Primary Option Menu
-TEST1.SELCOPYI.CMX:2  32752 V SEQ  Size=132  Alt=0,0;2  -+x
Command>  Scroll> Csr
ZZSE195I 14 occurrences of string "<" were found.
000000 * * * Top of File * * *
000001 ----- 20 line(s) not displayed -----
000021 <tso lista
000022 ----- 15 line(s) not displayed -----
000037 <alloc f(NEWLIB) new  da('%user%.NEW.LIB')  \
000038 ----- 9 line(s) not displayed -----
000047 <lvol Z*RES*  | SELCOPYi integrated 'List Volumes' command.
000048 ----- 11 line(s) not displayed -----
000059 <edit      %user%.ABC.TEST2012.FILE
000060 <edit      %user%.ABC.TEST2013.FILE
000061 <edit      %user%.ABC.LIVE` ```.FILE

000082
000083 All SELCOPYi display-windows may then be moved, resized, maximised
000084 minimised and restored in a fashion similar to those on your PC.
000085
000086 This is achieved by 'clicking' the window-borders, title-Bar
000087 or '-+x' buttons.
000088 (Clicking means move-cursor, then hit-ENTER.
000089 'Try setting your Mouse to do this!'

s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=0 | Col=1 | Alt=0,0;2 | Size=132 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 23. SELCOPYi - Focus Window.

Note that changes to data made in any view will immediately be reflected in all other views of the same file. i.e. Multiple "Views" of the same file are not independent edit sessions but are all logically connected.

Furthermore changes made in one view may be **UNDO**ne/**REDO**one in any other view of the same file.

## Marked Line- and Box-Block features

Lines of data may be deleted, copied or moved within the same file using the familiar line-commands supported by the standard **ISPF Editor**. Also lines of data may be copied or moved between different files using a very similar **CUT/PASTE** feature.

In addition, **SELCOPYi** provides features to manipulate a "**marked block**" of data within an edited file.

There are two types of marked blocks:

1. A **Line-Block** consists of one or more complete lines of text.

The top/bottom edges of a Line-Block are marked using the "**MrkLine**" key (**Shift-F6** by default).

2. A **Box-Block** consists of one or more columns within one or more lines of text.

The diagonal corners of a Box-Block are marked using the "**MrkBox**" key (**Shift-F5** by default).

A marked block is "unmarked" using the "**ResetBox**" key (**Shift-F12** by default).

Marked blocks of data may be:

- Deleted.
- Moved or copied to SELCOPYi's clipboard.
- Moved or copied to another location within the same or any other edited file.
- Overlaid on top of data at another location within the same or any other edited file.
- Filled with a single propagated character or left adjusted string.
- Used to restrict the scope of many primary commands, such as **CHANGE**.
- Used to define a column of incrementing **sequence numbers**, or to adjust existing numbers.

To demonstrate some of these features ...

- Edit the sample copybook as before.
- Type **ONLY PIC 41**.

```

SELCOPY/i - TEST1.SELCTRN.SAM1(ZZST2CPC) 80 F PDSE Size=59 Alt=0,0;1
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> Scroll> Csr
ZZSE195I 53 occurrences of string "PIC" were found.
000000 * * * Top of File * * *
000001 ----- 1 line(s) not displayed -----
000002         05 RT                                PIC X(001).
000003         05 ARTIST                            PIC X(070).
000004 ----- 1 line(s) not displayed -----
000005         05 RT                                PIC X(001).
000006         05 ALBUM                             PIC X(070).
000007 ----- 1 line(s) not displayed -----
000008         05 RT                                PIC X(001).
000009         05 PERSISTENT-ID                      PIC X(016).
000010         05 TRACK-NUM                          PIC 9(003).
000011         05 TRACK-ID                          PIC 9(004).
000012         05 NAME                              PIC X(120).
000013         05 TOTAL-TIME                         PIC 9(007) BINARY.
000014         05 FILE-SIZE                         PIC 9(009) BINARY.
000015         05 BIT-RATE                          PIC 9(004) BINARY.
000016         05 SAMPLE-RATE                      PIC 9(005) PACKED-DECIMAL.
000017         05 YEAR                              PIC 9(004).
000018         05 NORMALIZATION                      PIC S9(005) PACKED-DECIMAL.
000019         05 DISC-NUMBER                       PIC 9(003).
000020         05 ALBUM-ARTIST                       PIC X(041).
000021 ----- 1 line(s) not displayed -----
000022         07 RELEASE-YYYY                       PIC X(004).
000023         07 FILLER                             PIC X(001).
000024         07 RELEASE-MM                        PIC X(002).
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=0 | Col=1 | Alt=0,0;1 | Size=59 | Recl=80 | Fmt=F | Files=2 | Views=2

```

Figure 24. SELCOPYi - Focus Window.

## Copying a Line-Block (1)

- Place your cursor anywhere on **line 2** then press the "**MrkLine**" key (**Shift-F6**).
- Line 2 will be highlighted.
- Place your cursor anywhere on **line 12** then press **Shift-F6**.
- The block of lines from 2 to 12 will be highlighted.

```

SELCOPY/i - TEST1.SELCTRN.SAM1(ZZST2CPC) 80 F PDSE Size=59 Alt=0,0;1
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000000 * * * Top of File * * *
000001 ----- 1 line(s) not displayed -----
000002 05 RT PIC X(001).
000003 05 ARTIST PIC X(070).
000004 ----- 1 line(s) not displayed -----
000005 05 RT PIC X(001).
000006 05 ALBUM PIC X(070).
000007 ----- 1 line(s) not displayed -----
000008 05 RT PIC X(001).
000009 05 PERSISTENT-ID PIC X(016).
000010 05 TRACK-NUM PIC 9(003).
000011 05 TRACK-ID PIC 9(004).
000012 05 NAME PIC X(120).
000013 05 TOTAL-TIME PIC 9(007) BINARY.
000014 05 FILE-SIZE PIC 9(009) BINARY.
000015 05 BIT-RATE PIC 9(004) BINARY.
000016 05 SAMPLE-RATE PIC 9(005) PACKED-DECIMAL.
000017 05 YEAR PIC 9(004).
000018 05 NORMALIZATION PIC S9(005) PACKED-DECIMAL.
000019 05 DISC-NUMBER PIC 9(003).
000020 05 ALBUM-ARTIST PIC X(041).
000021 ----- 1 line(s) not displayed -----
000022 07 RELEASE-YYYY PIC X(004).
000023 07 FILLER PIC X(001).
000024 07 RELEASE-MM PIC X(002).
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=0 | Col=1 | Alt=0,0;1 | Size=59 | Recl=80 | Fmt=F | Files=2 | Views=2

```

Figure 25. SELCOPYi - Focus Window.

## Copying a Line-Block (2)

- Type **HOME** on the command line and press **ENTER**.  
You should then see your HOME command-centre as shown below.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=132      Alt=0,0;1
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>                               Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX **          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007  Type the 'HOME' (H0) command, or select Option 4 from the Primary
000008  Option Menu (=4) to return directly to this file at any time during
000009  your SELCOPYi session.
000010
000011  'What is the purpose of my HOME file???'
000012  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000013  issued from any SELCOPYi command-line. But since the same, or similar,
000014  command-sequences are executed regularly/frequently, it becomes
000015  very convenient and efficient to store these commands (along with
000016  meaningful comments) in an easy to maintain plain-text file.
000017
000018  To execute your stored commands just place your cursor anywhere
000019  within the command text, then press the 'ACTION' key (Default='F16').
000020  Try it now on the next line ... (Commands are colour-coded blue)
000021  <ts0 lista
000022  ' / \          Place cursor here then press Shift-F4 to'
000023  ' | _____ execute the 'TS0 LISTA' command.'
000024
000025  The '<' sign at the beginning of the line indicates that when the
    s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
    s7=SPLTJOIN s8=BoxFuncs s10=UNDO   s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=0,0;1 | Size=132 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 26. SELCOPYi - Focus Window.

## Copying a Line-Block (3)

- Place your cursor anywhere on **line 6** of your **HOME** file.
- Press the **"BoxFuncs"** key (**Shift-F8**).

The **"Line/Box-Block Options"** panel will be displayed as shown below.

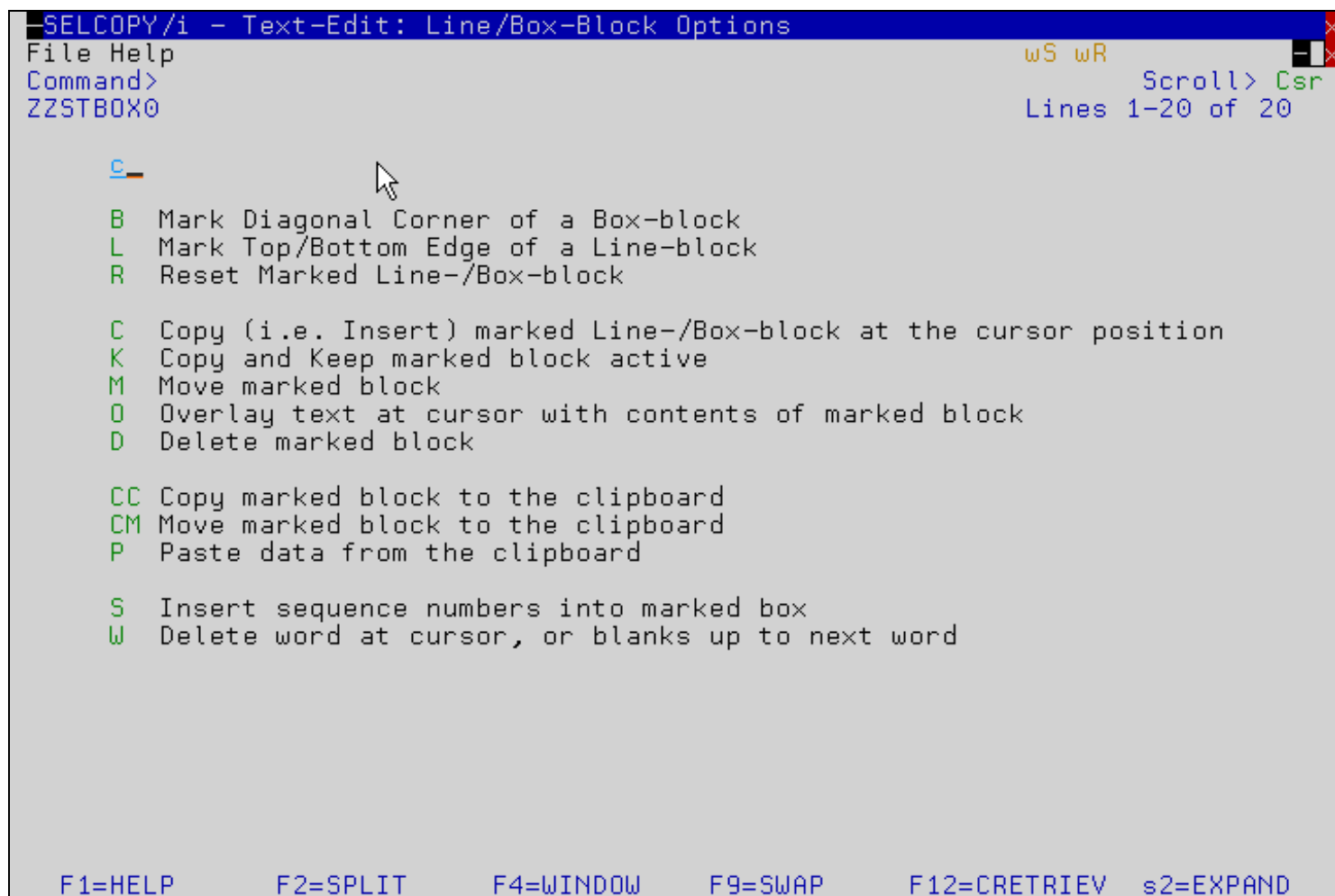


Figure 27. SELCOPYi - Focus Window.

## Copying a Line-Block (4)

- Type "C" in the option field and press **ENTER**.
- The marked block of lines will be copied into your HOME file following your previous cursor position at line 6.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=1,1;3
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      05 RT                          PIC X(001).
000008      05 ARTIST                      PIC X(070).
000009      05 RT                          PIC X(001).
000010      05 ALBUM                      PIC X(070).
000011      05 RT                          PIC X(001).
000012      05 PERSISTENT-ID              PIC X(016).
000013      05 TRACK-NUM                  PIC 9(003).
000014      05 TRACK-ID                   PIC 9(004).
000015      05 NAME                       PIC X(120).
000016  Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017  Option Menu (=4) to return directly to this file at any time during
000018  your SELCOPYi session.
000019
000020  'What is the purpose of my HOME file???'
000021  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022  issued from any SELCOPYi command-line. But since the same, or similar,
000023  command-sequences are executed regularly/frequently, it becomes
000024  very convenient and efficient to store these commands (along with
000025  meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=1,1;3 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 28. SELCOPYi - Focus Window.

## Deleting a Box-Block (1)

- Place your cursor at **column 29** of the **first** copied line then press the **"MrkBox"** key (**Shift-F5**).
- The first (top-left) box corner will be highlighted.
- Place your cursor at **column 43** of the **last** copied line then press the **Shift-F5** to mark the (bottom-right) corner.
- The box block will be highlighted.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=1,1;3
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      05 RT                          PIC X(001).
000008      05 ARTIST                      PIC X(070).
000009      05 RT                          PIC X(001).
000010      05 ALBUM                      PIC X(070).
000011      05 RT                          PIC X(001).
000012      05 PERSISTENT-ID              PIC X(016).
000013      05 TRACK-NUM                  PIC 9(003).
000014      05 TRACK-ID                   PIC 9(004).
000015      05 NAME                       PIC X(120).
000016  Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017  Option Menu (=4) to return directly to this file at any time during
000018  your SELCOPYi session.
000019
000020  'What is the purpose of my HOME file???'
000021  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022  issued from any SELCOPYi command-line. But since the same, or similar,
000023  command-sequences are executed regularly/frequently, it becomes
000024  very convenient and efficient to store these commands (along with
000025  meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO   s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=1,1;3 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 29. SELCOPYi - Min/Max/Close Buttons.



## Deleting a Box-Block (2)

- Press the "BoxFuncs" key (Shift-F8).
- The "Line/Box-Block Options" panel will be displayed.

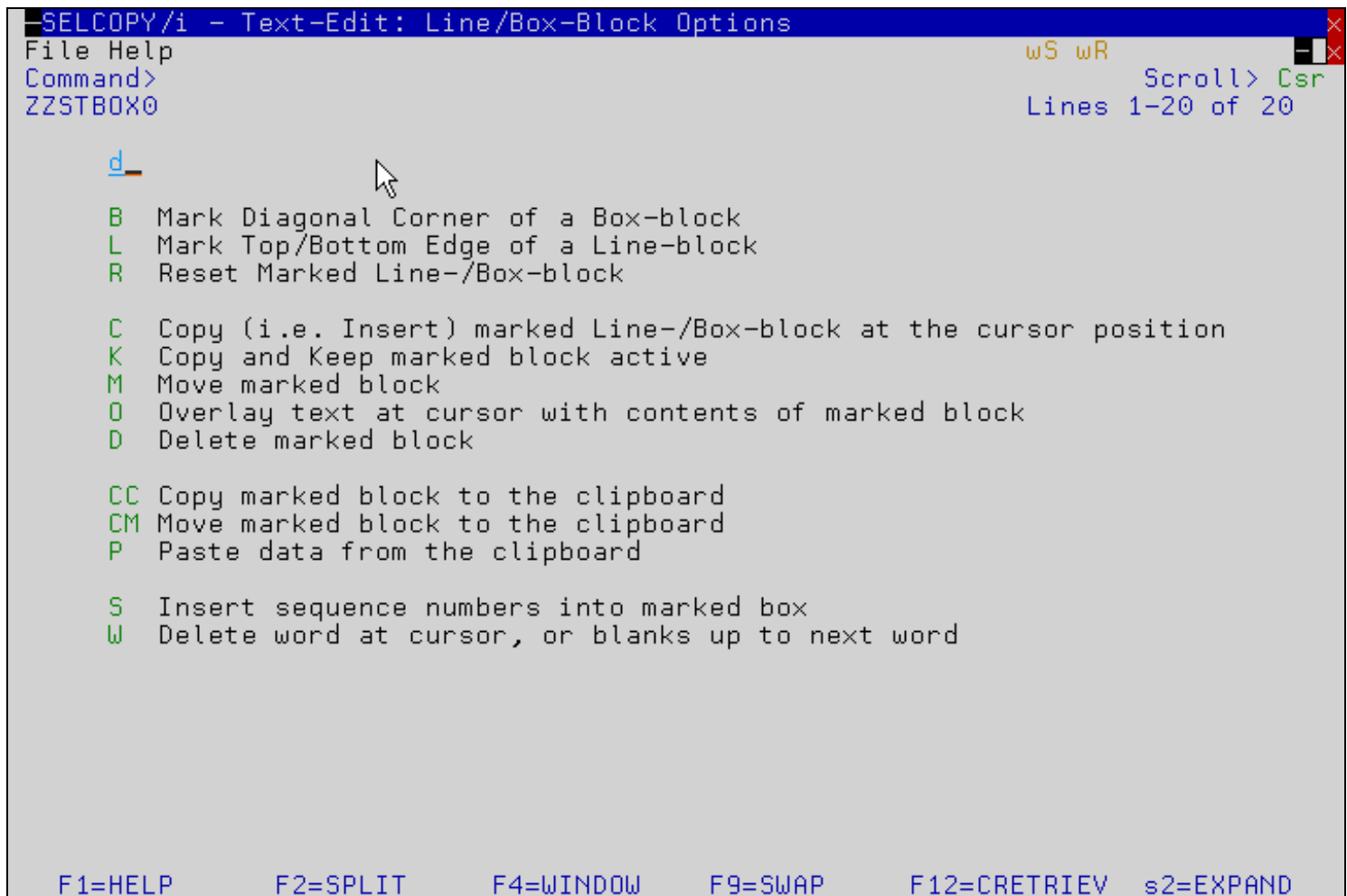


Figure 30. SELCOPYi - Focus Window.

## Deleting a Box-Block (3)

- Type "D" in the option field and press **ENTER**.
- The marked box-block will be deleted from your HOME file.
- Any data to the right of block will have been shifted left.  
This would include any data that was beyond the visible window area to the right.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=2,2;5
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> _
      <---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      05 RT                          X(001).
000008      05 ARTIST                      X(070).
000009      05 RT                          X(001).
000010      05 ALBUM                      X(070).
000011      05 RT                          X(001).
000012      05 PERSISTENT-ID            X(016).
000013      05 TRACK-NUM                9(003).
000014      05 TRACK-ID                 9(004).
000015      05 NAME                      X(120).
000016      Type the 'HOME' (HD) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=2,2;5 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie
  
```

Figure 31. SELCOPYi - Min/Max/Close Buttons.

## Moving a Box-Block (1)

- Place your cursor at **column 11** of the **first** copied line then press the **"MrkBox"** key (**Shift-F5**).
- The first box corner will be highlighted.
- Place your cursor at **column 12** of the **last** copied line then press the **Shift-F5**.
- The box block containing COBOL level number will be highlighted.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ   Size=141   Alt=2,2;5
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>                               Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      05 RT                -      X(001).
000008      05 ARTIST            -      X(070).
000009      05 RT                -      X(001).
000010      05 ALBUM             -      X(070).
000011      05 RT                -      X(001).
000012      05 PERSISTENT-ID    -      X(016).
000013      05 TRACK-NUM        -      9(003).
000014      05 TRACK-ID        -      9(004).
000015      05 NAME             -      X(120).
000016  Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017  Option Menu (=4) to return directly to this file at any time during
000018  your SELCOPYi session.
000019
000020  'What is the purpose of my HOME file???'
000021  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022  issued from any SELCOPYi command-line. But since the same, or similar,
000023  command-sequences are executed regularly/frequently, it becomes
000024  very convenient and efficient to store these commands (along with
000025  meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION   s5=MrkBox   s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO    s12=ResetBox
Te | Line=1 | Col=1 | Alt=2,2;5 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 32. SELCOPYi - Focus Window.

## Moving a Box-Block (2)

- Place your cursor at **column 28** of the **first** copied line.
- We will move the marked box to this location.
- Press the **"BoxFuncs"** key (**Shift-F8**).
- Type **"M"** in the option field and press **ENTER**.
- The marked box-block will be moved. Data between the original source column and the target column will be shifted left, but data to the right of the target column will not move.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=3,3;7
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> _
      <---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT              05      X(001).
000008      ARTIST          05      X(070).
000009      RT              05      X(001).
000010      ALBUM           05      X(070).
000011      RT              05      X(001).
000012      PERSISTENT-ID 05      X(016).
000013      TRACK-NUM      05      9(003).
000014      TRACK-ID       05      9(004).
000015      NAME           05      X(120).
000016      Type the 'HOME' (HD) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=3,3;7 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 33. SELCOPYi - Focus Window.

## Overlaying a Box-Block (1)

- Place your at **column 33** of the **first** copied line then press the "**MrkBox**" key (**Shift-F5**).
- Place your at **column 35** of the **last** copied line then press the **Shift-F5**.
- The box block containing COBOL field data lengths will be hilighted.
- Place your at **column 20** of the **first** copied line as shown below.  
We will overlay the marked box onto this location.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=3,3;7
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>                               Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT          05      X(001).
000008      ARTIST      05      X(070).
000009      RT          05      X(001).
000010      ALBUM       05      X(070).
000011      RT          05      X(001).
000012      PERSISTENT-ID 05      X(016).
000013      TRACK-NUM  05      9(003).
000014      TRACK-ID   05      9(004).
000015      NAME       05      X(120).
000016      Type the 'HOME' (HD) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO    s12=ResetBox
Te | Line=1 | Col=1 | Alt=3,3;7 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie

```

Figure 34. SELCOPYi - Focus Window.

## Overlaying a Box-Block (2)

- Press the "BoxFuncs" key (Shift-F8).

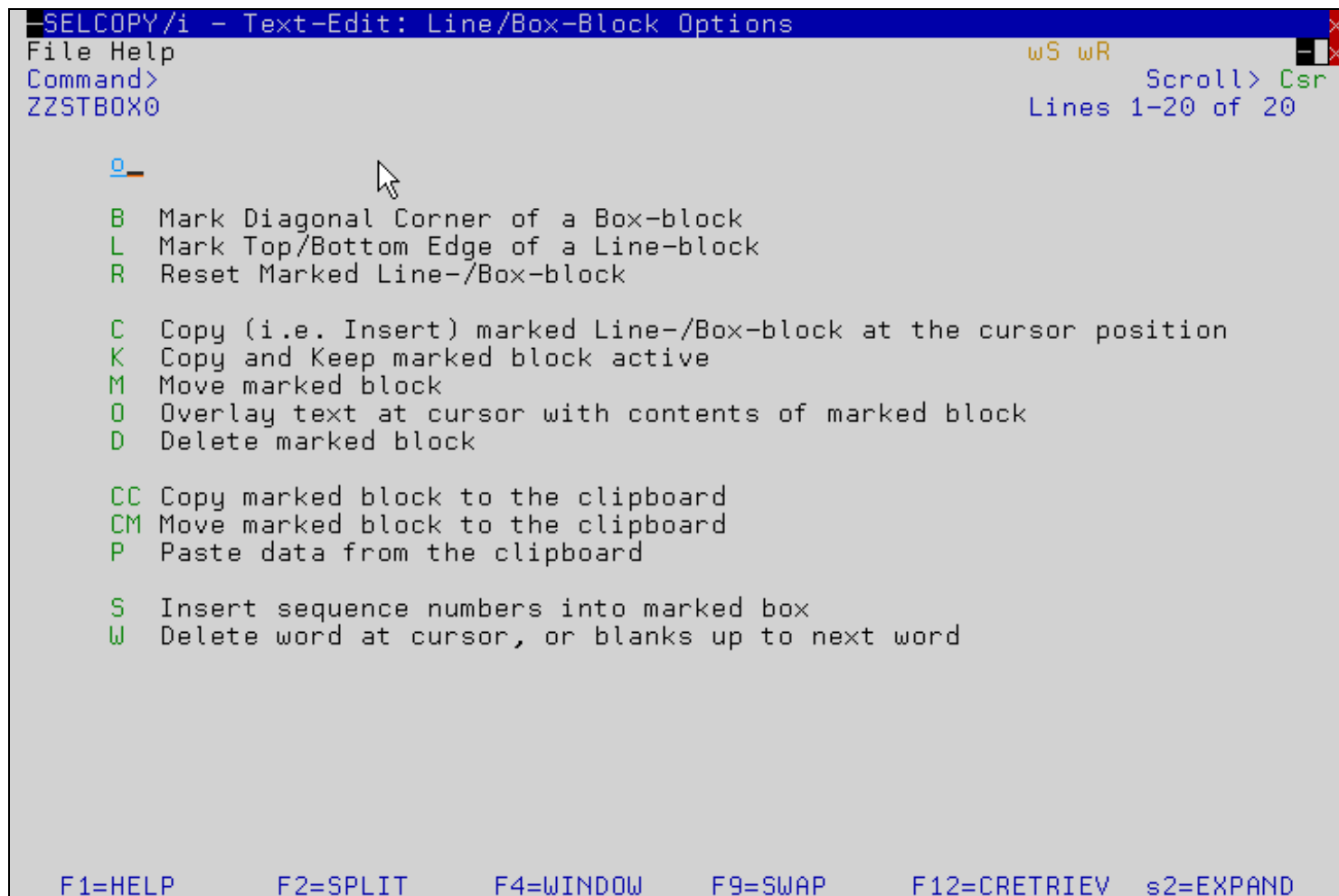


Figure 35. SELCOPYi - Focus Window.

## Overlaying a Box-Block (3)

- Type "O" in the option field and press **ENTER**.
- The marked box-block will overlay the original data.  
The target data remains marked and no left/right shifting occurs.

The screenshot shows the SELCOPYI Focus Window. At the top, a title bar reads "SELCOPY/i - TEST1.SELCOPYI.CMX 32752 V SEQ Size=141 Alt=4,4;9". Below the title bar is a menu bar with "File Edit Actions Options Utilities Window SwapList Help" and keyboard shortcuts "wS wR". A status bar at the bottom shows "Te | Line=1 | Col=1 | Alt=4,4;9 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie".

The main text area displays the following content:

```

Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT          001      05      X(001).
000008      ARTIST      070      05      X(070).
000009      RT          001      05      X(001).
000010      ALBUM       070      05      X(070).
000011      RT          001      05      X(001).
000012      PERSISTE016ID 05      X(016).
000013      TRACK-NU003      05      9(003).
000014      TRACK-ID004      05      9(004).
000015      NAME       120      05      X(120).
000016  Type the 'HOME' (HD) command, or select Option 4 from the Primary
000017  Option Menu (=4) to return directly to this file at any time during
000018  your SELCOPYi session.
000019
000020  'What is the purpose of my HOME file???'
000021  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022  issued from any SELCOPYi command-line. But since the same, or similar,
000023  command-sequences are executed regularly/frequently, it becomes
000024  very convenient and efficient to store these commands (along with
000025  meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO    s12=ResetBox
  
```

A mouse cursor is visible over the text "S E L C O P Y i". A box-block is overlaid on the text, highlighting the words "RT", "001", "05", and "X(001)." on line 000007.

Figure 36. SELCOPYI - Focus Window.

## Incremental Sequence Numbers (1)

We can easily replace the data in the marked box with a sequence number.

For our example we'll start the sequence at **100** and increase by **20** for each new line.

- Press the "**BoxFuncs**" key (**Shift-F8**).
- Type "**S**" in the option field and press **ENTER**.

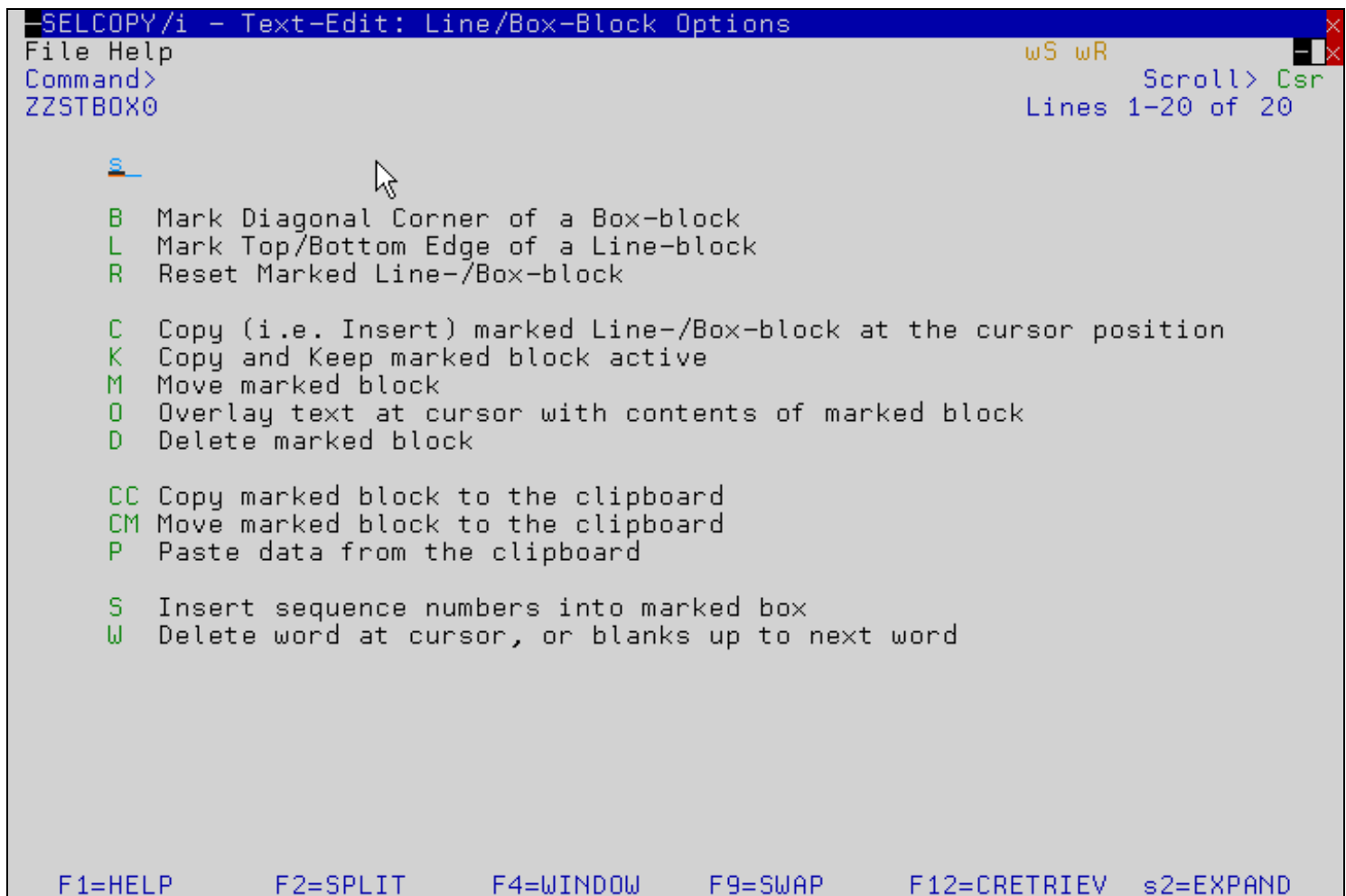


Figure 37. SELCOPYi - Focus Window.



## Incremental Sequence Numbers (2)

- The "Generate Sequence Numbers ..." panel will be displayed.
- Enter "DEC" in the "Base:" option field to select decimal sequence numbers.
- Enter "100" in the "Start Value:" option field.
- Enter "20" in the "Increment:" option field.
- Enter "YES" in the "Leading Zeros:" option field.
- Select option "Use above specified start value".
- Press **ENTER** to close the panel and update the values.

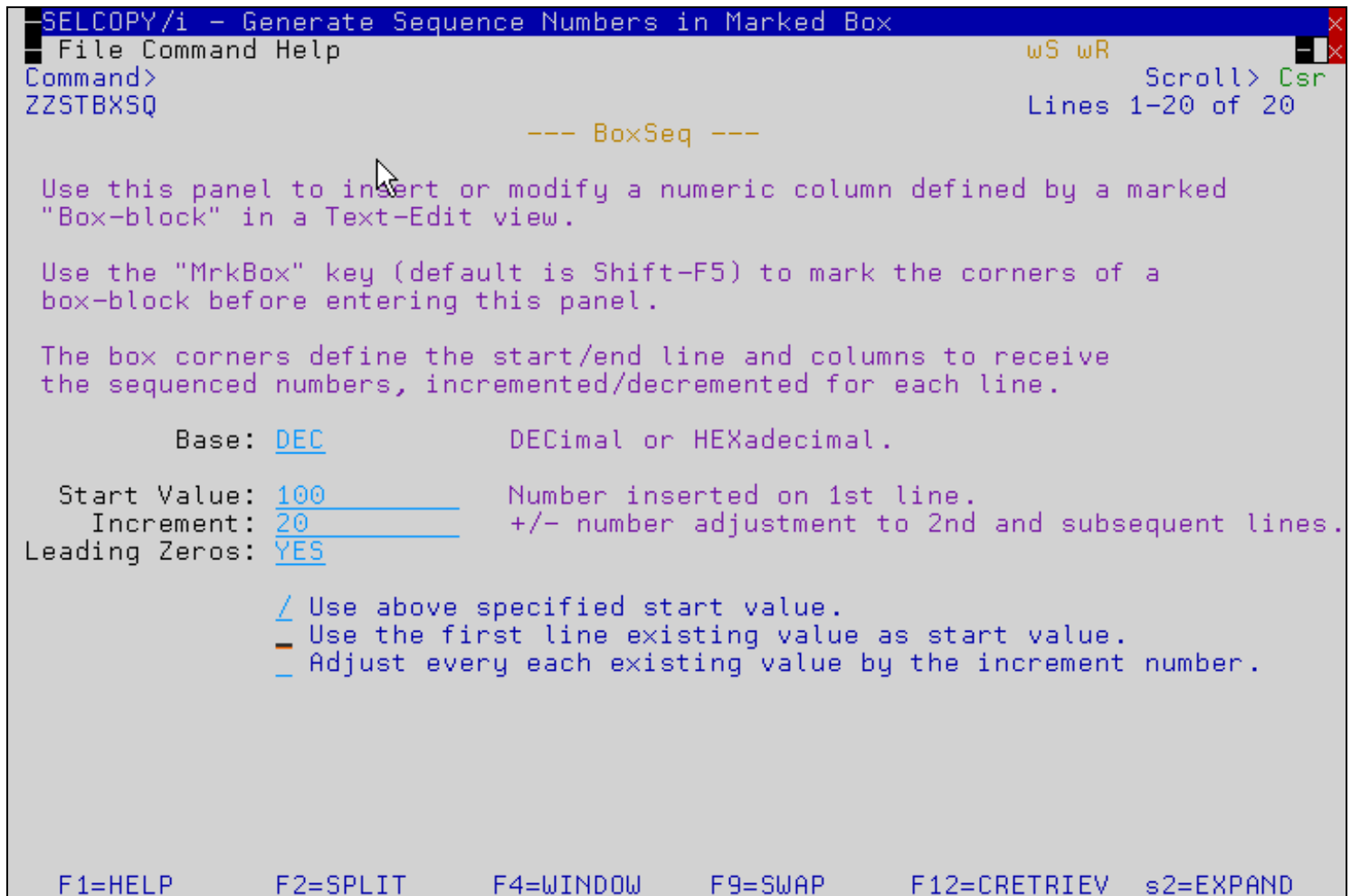


Figure 38. SELCOPYi - Focus Window.

## Adjusting Sequence Numbers (1)

We can also use the same panel to adjust the existing numbers in a box block.

As an exercise we'll add 3 to each of the original existing numbers.

- First press the **UNDO** key (**Shift-F10**) to restore the previous values.
- Press the **"BoxFuncs"** key (**Shift-F8**).
- Type **"S"** in the option field and press **ENTER**.
- Enter **"3"** in the **"Increment:"** field.
- Select option **"Adjust every existing value by the increment number"**.

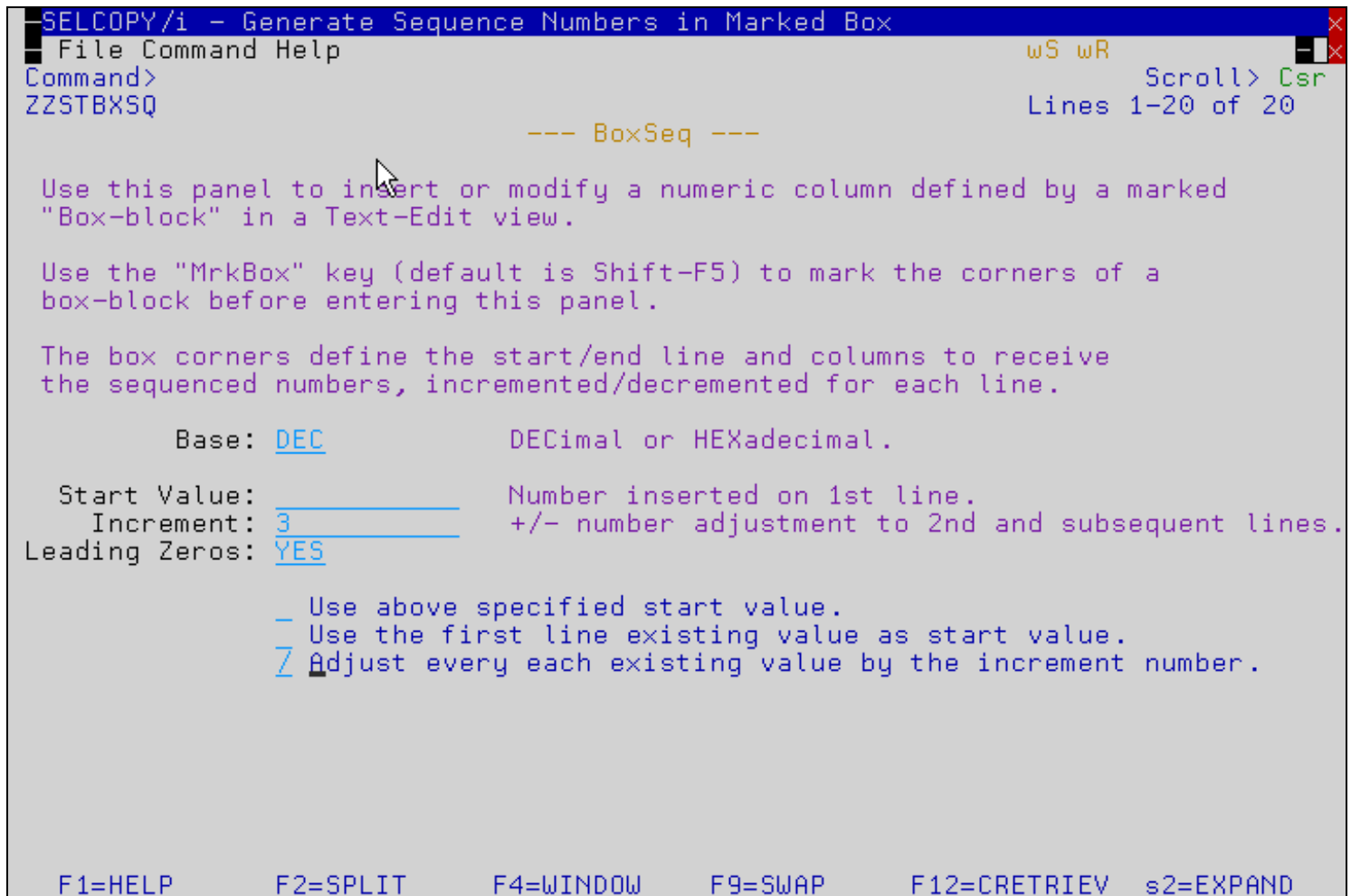


Figure 39. SELCOPYi - Focus Window.

## Adjusting Sequence Numbers (2)

Press **ENTER** to update the values.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=12,12;8
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> _                               Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT              05      X(004).
000008      ARTIST          05      X(073).
000009      RT              05      X(004).
000010      ALBUM           05      X(073).
000011      RT              05      X(004).
000012      PERSISTENT-ID 05      X(019).
000013      TRACK-NUM      05      9(006).
000014      TRACK-ID      05      9(007).
000015      NAME          05      X(123).
000016      Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=33 | Alt=12,12;8 | Size=141 | Recl=32752 | Fmt=V | Files=3 |

```

Figure 40. SELCOPYi - Focus Window.

## Adjusting Sequence Numbers (3)

You can use the **UNDO/REDO** keys to verify the increment has occurred for each value.

```

SELCOPYY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=3,3;7*
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>                               Scroll> Csr
ZZSE053I Undo affected 9 line(s).
000001  ** TEST1.SELCOPYI.CMX ***      L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT          -      05      X(001).
000008      ARTIST      -      05      X(070).
000009      RT          -      05      X(001).
000010      ALBUM       -      05      X(070).
000011      RT          -      05      X(001).
000012      PERSISTENT-ID 05      X(016).
000013      TRACK-NUM   05      9(003).
000014      TRACK-ID    05      9(004).
000015      NAME       05      X(120).
000016      Type the 'HOME' (HD) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=3,3;7* | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vi
  
```

Figure 41. SELCOPYYi - Focus Window.

## Using the "BOX" Primary Command (1)

Next we'll use the **BOX** primary command to change all occurrences of "-" (minus) to "#" (sharp) within the COBOL field names only.

- Mark the data block as shown below.
- On the command line type **BOX CHANGE ALL '-' '#'**.
- Press **ENTER** to make the change.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=3,3;7
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> box c all '-' '#'
<-----1-----2-----3-----4-----5-----6-----7--
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT          05      X(001).
000008      ARTIST      05      X(070).
000009      RT          05      X(001).
000010      ALBUM       05      X(070).
000011      RT          05      X(001).
000012      PERSISTENT-ID 05      X(016).
000013      TRACK-NUM  05      9(003).
000014      TRACK-ID   05      9(004).
000015      NAME       05      X(120).
000016      Type the 'HOME' (HD) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=1 | Alt=3,3;7 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vie
  
```

Figure 42. SELCOPYi - Focus Window.

## Using the "BOX" Primary Command (2)

This technique saves you setting up setting "BOUNDS" and line names in the prefix area before issuing your CHANGE command.

```

-SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=4,4;8
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>                               Scroll> Csr
ZZSE020I 3 occurrence(s) changed on 3 line(s).
000001  ** TEST1.SELCOPYI.CMX ***      L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT      05      X(001).
000008      ARTIST  05      X(070).
000009      RT      05      X(001).
000010      ALBUM   05      X(070).
000011      RT      05      X(001).
==CHG>      PERSISTENT#ID 05      X(016).
==CHG>      TRACK#NUM   05      9(003).
==CHG>      TRACK#ID    05      9(004).
000015      NAME      05      X(120).
000016  Type the 'HOME' (HO) command, or select Option 4 from the Primary
000017  Option Menu (=4) to return directly to this file at any time during
000018  your SELCOPYi session.
000019
000020  'What is the purpose of my HOME file???'
000021  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022  issued from any SELCOPYi command-line. But since the same, or similar,
000023  command-sequences are executed regularly/frequently, it becomes
000024  very convenient and efficient to store these commands (along with
000025  meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=11 | Alt=4,4;8 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vi

```

Figure 43. SELCOPYi - Focus Window.

## Using the "FILLBOX" Primary Command (1)

Next we'll use the **FILLBOX (FILL)** primary command to set all characters within a marked block.

This technique is most frequently used to "blank" out a portion of the file, but we'll use it to set the value 'X'.

- Mark the data block as shown below.
- On the command line type "**FILL X**".

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=4,4;8
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> fill X_                      Scroll> Csr
ZZSE020I 3 occurrence(s) changed on 3 line(s).
000001 ** TEST1.SELCOPYI.CMX ***      L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005      This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      RT      05      X(001).
000008      ARTIST  05      X(070).
000009      RT      05      X(001).
000010      ALBUM   05      X(070).
000011      RT      05      X(001).
==CHG>      PERSISTENT#ID 05      X(016).
==CHG>      TRACK#NUM   05      9(003).
==CHG>      TRACK#ID    05      9(004).
000015      NAME      05      X(120).
000016      Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017      Option Menu (=4) to return directly to this file at any time during
000018      your SELCOPYi session.
000019
000020      'What is the purpose of my HOME file???'
000021      TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022      issued from any SELCOPYi command-line. But since the same, or similar,
000023      command-sequences are executed regularly/frequently, it becomes
000024      very convenient and efficient to store these commands (along with
000025      meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine  s2=DelLine  s3=DupLine  s4=ACTION  s5=MrkBox  s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO    s11=REDO   s12=ResetBox
Te | Line=1 | Col=11 | Alt=4,4;8 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vi

```

Figure 44. SELCOPYi - Focus Window.

## Using the "FILLBOX" Primary Command (2)

Press **ENTER** to set the values.

```

SELCOPY/i - TEST1.SELCOPYI.CMX      32752 V SEQ      Size=141      Alt=5,5;9
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> _                               Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001  ** TEST1.SELCOPYI.CMX ***          L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003      '--- S E L C O P Y i ---'
000004
000005  This is your 'HOME' file (or personal 'Command-Centre').
000006
000007      XXXXXXXXXXXXXXXX 05      X(001).
000008      XXXXXXXXXXXXXXXX 05      X(070).
000009      XXXXXXXXXXXXXXXX 05      X(001).
000010      XXXXXXXXXXXXXXXX 05      X(070).
000011      XXXXXXXXXXXXXXXX 05      X(001).
==CHG>      XXXXXXXXXXXXXXXX 05      X(016).
==CHG>      XXXXXXXXXXXXXXXX 05      9(003).
==CHG>      XXXXXXXXXXXXXXXX 05      9(004).
000015      XXXXXXXXXXXXXXXX 05      X(120).
000016  Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017  Option Menu (=4) to return directly to this file at any time during
000018  your SELCOPYi session.
000019
000020  'What is the purpose of my HOME file???'
000021  TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022  issued from any SELCOPYi command-line. But since the same, or similar,
000023  command-sequences are executed regularly/frequently, it becomes
000024  very convenient and efficient to store these commands (along with
000025  meaningful comments) in an easy to maintain plain-text file.
      s1=InsLine   s2=DelLine   s3=DupLine   s4=ACTION   s5=MrkBox   s6=MrkLine
      s7=SPLTJOIN s8=BoxFuncs s10=UNDO      s11=REDO      s12=ResetBox
Te | Line=1 | Col=11 | Alt=5,5;9 | Size=141 | Recl=32752 | Fmt=V | Files=3 | Vi

```

Figure 45. SELCOPYi - Focus Window.



## Using the "FILLBOX" Primary Command (3)

The **FILL** command may also be used to set a left adjusted character string on each box block line.

- On the command line type **"FILL ABCDEF"**.
- Press **ENTER** to set the values.

```

SELCOPY/i - TEST1.SELCOPYI.CMX 32752 V SEQ Size=141 Alt=6,6;10
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
000001 ** TEST1.SELCOPYI.CMX *** L=001 --- 2014/07/30 14:39:49 (TEST1
000002
000003 '--- S E L C O P Y i ---'
000004
000005 This is your 'HOME' file (or personal 'Command-Centre').
000006
000007 ABCDEF 05 X(001).
000008 ABCDEF 05 X(070).
000009 ABCDEF 05 X(001).
000010 ABCDEF 05 X(070).
000011 ABCDEF 05 X(001).
==CHG> ABCDEF 05 X(016).
==CHG> ABCDEF 05 9(003).
==CHG> ABCDEF 05 9(004).
000015 ABCDEF 05 X(120).
000016 Type the 'HOME' (H0) command, or select Option 4 from the Primary
000017 Option Menu (=4) to return directly to this file at any time during
000018 your SELCOPYi session.
000019
000020 'What is the purpose of my HOME file???'
000021 TSO, ISPF and internal SELCOPYi primary commands may obviously be
000022 issued from any SELCOPYi command-line. But since the same, or similar,
000023 command-sequences are executed regularly/frequently, it becomes
000024 very convenient and efficient to store these commands (along with
000025 meaningful comments) in an easy to maintain plain-text file.
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1 | Col=11 | Alt=6,6;10 | Size=141 | Recl=32752 | Fmt=V | Files=3 | V

```

Figure 46. SELCOPYi - Focus Window.

## String Coloring

"Syntax" coloring, similar to that supported by the standard **ISPF-Editor**, is available within the SELCOPYi Text-Editor, and is controlled by the **HILITE** primary command. Type **HELP HILITE** for more information on this feature.

In addition, **SELCOPYi** provides the ability to control color highlighting of all occurrences of one or more **user defined strings**.

- Use primary command **SCOLOR** to assign a color to all occurrences of a defined string.
- Use primary command **LCOLOR** to assign a color to the whole of each line that contains a defined string.

To demonstrate, we'll edit another of the sample files that was created during the "**Setup Training Material**" section.

- Select option **1** from the **Primary Options Menu** to open the **Text Edit** panel, then enter the name of the sample file:  
♦ Type **userpfx.SELCTRN.ZZST2DAT** in the *Dsn* field.
- Press **ENTER** to edit the sample sequential file.  
This file represents a recorded music collection comprising "**Artist**", "**Album**" and "**Track**" records.
- Navigate to the artist "**U2**" by typing the primary command **FIND '1U2' 1**.
- Type the primary command **SCOLOR 'World' YELLOW**.  
This will highlight all occurrences of the string "**World**" (case-sensitive) in **yellow**. "**YELLOW**" may be abbreviated to "**Y**".
- Type the primary command **SCOL '(Live)' R USC**.  
This will highlight all occurrences of the string "**(Live)**" (case-sensitive) in **underscored red**.
- Place your cursor at **column 1** of any visible line, then press the "**MrkBox**" key (**Shift-F5**).  
The single character "box-block" will be highlighted.
- Type the primary command **BOX LCOLOR '1' G REV**.  
This will highlight all "**Artist**" lines (character "**1**" at **column 1**) in **green reverse-video**.
- Type the primary command **BOX LCOL '2' P REV**.  
This will highlight all "**Album**" lines (character "**2**" at **column 1**) in **pink reverse-video**.

```

SELCOPY/i - TEST1.SELCTRN.ZZST2DAT      268 V SEQ      Size=1298      Alt=1,1;0
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
001235 1U2
001236 2Achtung Baby
001237 3192F56884716ABF800A391GZoo Station
001238 327CE6BA912ACC29900B391IEven Better Than the Real Thing
001239 354528D9592D49A7000C392AOne
001240 311E528F4AF497A2700D392CUntil the End of the World
001241 347CCBA406035ED8800E392EWho's Gonna Ride Your Wild Horses
001242 327DC0606D31FFC9F00F392GSo Cruel
001243 3F79492C0EFEA95A700G392IThe Fly
001244 3BFBA673892AD848800H393AMysterious Ways
001245 355717F0FD350745800I393CTryin' to Throw Your Arms Around the World
001246 386715319ABE6043901{393EUltra Violet (Light My Way)
001247 3DB813F471DFDB98801A393GAcrobat
001248 38AB8FDF3BDA1B8E401B393ILove Is Blindness
001249 2How To Dismantle An Atomic Bomb
001250 37C66E9CA8C08461E00C202CSometimes You Can't Make It On Your Own
001251 2Rattle and Hum
001252 3A35A5D7E59D3543400A394AHelter Skelter (Live)
001253 3FE9DD83A84D8D35A00B394CVan Diemen's Land (Live)
001254 309C9E3E984BE65E500C394EDesire
001255 39299D556D20866D400D394GHawkmoon 269
001256 3CF5FF6577558B70F00E394IAll Along the Watchtower (Live)
001257 354F42C194714C42800F395AStill Haven't Found What I'm Looking For (Live)
001258 3B027F204E710749300H395ESilver and Gold (Live)
001259 3A8947AC2DE3DB95200I395GPride (In the Name of Love) [Live]
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1235 | Col=1 | Alt=1,1;0 | Size=1298 | Recl=268 | Fmt=V | Files=2 | V

```

Figure 47. SELCOPYi - SCOLOR/LCOLOR.



## Option 2 - Data Edit (SDE)

---

Data set records may have an associated file structure that maps field information (position, length and data type) for all data within each data set record. These structures often exist as a PL/1 or COBOL copybook.

The **SELCOPYi** Structured Data Environment ( **SDE**) allows users to display and process structured data sets using a pre-defined SDE structure so that record data is formatted and arranged in field columns. An SDE structure may be generated from a copybook or using SDE's Create Structure internal syntax, and can contain a number of mappings, one for each different type of data set record.

During this section you will learn how to:

- *Change Display Modes*
- *Use the LAYOUT command to display the active structure*
- *Scroll the display to an individual Field*
- *Select/Order visible Fields*
- *Adjust Field display column-widths*
- *Use the SELECT panel*
- *Use the FIND, EXCLUDE and ONLY commands*
- *Use the CHANGE command*
- *Use UNDO/REDO*
- *Filter records using ALL/MORE/LESS commands*
- *Work with Multiple Record Types with different Layouts*
- *Modify record data/length*
- *Work with Segmented Records*

## The SDE Edit/Browse Entry Panel

The SDE panel may be started using any of the following methods:

- Select option **2** from the **SELCOPYi** Primary Option Menu (=).
- At any primary command prompt type **=2**.
- At any primary command prompt type **SDE**.
- From any dataset, library or HFS path list window, use the **SD** line-command.

```

SELCOPY/i - Structured Data Browse/Edit
File Command Structure Replace Help          wS wR      Scroll> Csr
Command>                                     Lines 1-21 of 21
ZZSGSDE0
PDS/PDSE member, Sequential, VSAM or HFS path:
Name> USER123.SELCTRN.ZZST1DAT              + Member>
Volume>                                     If dataset is uncataloged.

Action:
  Browse Data.
  / Edit Full.      (Insert/Update/Delete)   - Edit Full Auxiliary. (AUX File)
  - Edit In-Place. (Update only)             - Edit Full Read-Only. (DISP=SHR)
                                           - Edit Full Read-Only & Auxiliary.

Structure/Copybook overlay:
  / Dsn> USER123.SELCTRN.SAM1                Member> ZZST1CPC
  Type:   - SDO      - AData  / Cobol  - PL1

Record Selection:
  - Start> _____ + / Record  - Key  - RBA
  - For>   @          # records
  - Filter> Q Filter selected records. (F=File; Q=Quick) (PF6=Edit Filter)
  File> _____ Member>

Additional Options: _ (Enter "/" to display HFS and Profile options.)
  
```

Figure 48. SELCOPYi - Data Edit (SDE) Panel (=2).

To follow the demonstration use the panel to edit the sample dataset using the supplied **COBOL** or **PL1** copybook.

- Specify the *Data File*:
  - ◆ Type **userpfx.SELCTRN.ZZST1DAT** in the *Name* field, where *userpfx* is your own user prefix. If wildcards are specified then a dataset list will be displayed from which you can make a selection.
  - ◆ The *Member* field may be left blank, but regardless will be ignored when the *Name* field refers to a non-PDS dataset. If wildcards are specified then a member list will be displayed from which you can make a selection.
- Specify the *Action*:
  - ◆ Activate option *Edit Full* by entering a / in the left margin field.
- Specify the *Structure/Copybook overlay*:
  - ◆ Activate the option by entering a / in the left margin field. This option is provided so that you may deactivate / reactivate structure formatting without needing to remove / retype the dataset / member name.
  - ◆ Type **userpfx.SELCTRN.SAM1** in the *Dsn* field, to specify the PDS library containing the supplied COBOL / PL1 copybook. If wildcards are specified then a dataset list will be displayed from which you can make a selection.
  - ◆ Type **ZZST1CPC** in the *Member* field (for COBOL installations).
  - ◆ Type **ZZST1CPP** in the *Member* field (for PL1 installations).
  - ◆ If wildcards are specified then a member list will be displayed from which you can make a selection.
  - ◆ Check the *Type* option for *Cobol* or *PL1* as appropriate. Note that SELCOPYi uses its own internal "compiler" to parse COBOL and PL1 copybooks, so you may use whichever sample copybook you please without the need for an available IBM compiler.
- Press **ENTER** to edit the sample dataset.

**Note:** The following sample commands and screen-shots depict use of the **COBOL** copybook.

## Editing Sample Dataset 1

- The first sample dataset represents a music collection, with each **"Track"** described by a separate logical record.
- The initial view of the data is presented in formatted multi-record (table) display mode.
- Press **F10** / **F11** to scroll the display left/right in order to view further data fields.

SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C)  
 File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr

Command>  
 Record type: TRACK Fixed(407) Offset=0 Data elements=18

	PERSISTENT-ID #2 AN 1:16	TRACK-NUM #3 ZD 17:3	TRACK-ID #4 ZD 20:4	NAME #5 AN 24:120
	<---+---1---+>	<-->	<--->	<---+---1---+---2---+---3---
00000001	CB12DD714D51828C	001	2083	Rolling In the Deep
00000002	2648A25633D15404	002	2085	Rumour Has It
00000003	9815923C6D2E6830	003	2087	Turning Tables
00000004	7D003FF752074C18	004	2089	Don't You Remember
00000005	AED739D8574AA4C5	005	2091	Set Fire to the Rain
00000006	E755BCE1CF5CDEA7	006	2093	He Won't Go
00000007	6798C2AB0AFB2571	007	2095	Take It All
00000008	962835D1647DE75E	008	2097	I'll Be Waiting
00000009	D8A6C8FDC2802177	009	2099	One and Only
00000010	2502515DEB535010	010	2101	Lovesong
00000011	E374BE6EE7C86B1D	011	2103	Someone Like You
00000012	D4EB4EBF4651EF20	012	2105	I Found a Boy (Bonus Track)
00000013	CEC92B1BA3204A0A	013	2107	Adele 21 - A Track By Track Interv
00000014	6D4C2C7BA7E01593	001	4169	Hold On
00000015	E241B09CC251C386	002	4171	I Found You
00000016	E74C16BCB319870C	003	4173	Hang Loose
00000017	214ED5D95884533C	004	4175	Rise to the Sun
00000018	0E421AFCD141D22D	005	4177	You Ain't Alone
00000019	FF47FB9E05DE8967	006	4179	Goin' to the Party
00000020	5D46C681552440BF	007	4181	Heartbreaker
00000021	C54FE77922485624	008	4183	Boys & #38; Girls
00000022	8D4B5913F78CEEE3	009	4185	Be Mine
00000023	B044D8ED2337A412	010	4187	I Ain't the Same

Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

Figure 49. SELCOPYi - SDE Table View.

## Display Modes

## Display HEX Data

- Type **HEX ON** to set hexadecimal display on.
- Type **HEX OFF** to set hexadecimal display off.
- Type **HEX** to toggle hexadecimal display on/off.
- Type **Help HEX** for full information.

**Notes:**

1. Where sample commands are provided, uppercase denotes the minimum abbreviation.
2. To use any SDE command from a non-SDE browse / edit command prompt you must prefix the command with **SD** .  
e.g. **SD Help HEX**
3. From an SDE browse/edit command prompt the **SD** prefix is unnecessary. e.g. **Help HEX**

[illegible]

Figure 50. SELCOPYi - SDE HEX ON.

## Formatted Single-Record (MAP/FMT) Display Mode

- Type **MAP** or **FMT** to set formatted single-record display mode.
- Press **F7** / **F8** to scroll the display up/down in order to view further fields within the same record.
- Press **F10** / **F11** to scroll the display to the previous/next record.
- Use the **SHOW (S)** command to control various aspects of the display.  
Type **Help Show** for full information.
- Use the **OFFSET (OFST)** command to control the format of the field offset column.  
Type **Help OFST** for full information.
- Use the **GROUP (G)** command to control display of group fields.  
Type **Help Group** for full information.
- Type **HEX** to toggle hexadecimal display on/off.

```
SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C)
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
Record> 00000001 Flags: f Length: 407
Ref Field Type <---+---1---+---2---+---3---+---4---+---5
#1 TRACK AN 1:407
#2 PERSISTENT-ID AN 1:16 CB12DD714D51828C
#3 TRACK-NUM ZD 17:3 001
#4 TRACK-ID ZD 20:4 2083
#5 NAME AN 24:120 Rolling In the Deep
#6 ARTIST AN 144:70 Adele
#7 ALBUM AN 214:70 21
#8 TOTAL-TIME FB 284:4 228093
#9 FILE-SIZE FB 288:4 8050806
#10 BIT-RATE FB 292:2 256
#11 SAMPLE-RATE PD 294:3 44100
#12 YEAR ZD 297:4 2011
#13 NORMALIZATION PD 301:3 5151
#14 DISC-NUMBER ZD 304:3 001
#15 ALBUM-ARTIST AN 307:41 Adele
#16 RELEASE-DATE AN 348:20 2011-01-21T08:00:00Z
#17 DATE-ADDED AN 368:20 2012-08-02T11:30:36Z
#18 DATE-MODIFIED AN 388:20 2011-08-19T12:29:17Z
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View
```

Figure 51. SELCOPYi - SDE MAP/FMT.



## Unformatted Multi-Record (CHAR) Display Mode

- Type **CHAR** to set unformatted multi-record display mode.
- For non-segmented structures, this display is the equivalent of removing the structure.
- For segmented structures, each line represents an individual segment in its raw state, with the prefix area indicating the physical record to which it belongs.
- Type **HEX** to toggle hexadecimal display on/off.

```

SELCOPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST10X
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: UnMapped      Fixed(407) Offset=0 Data elements=1
UnMapped
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7
00000001 CB12DD714D51828C00A208CRolling In the Deep
00000002 2648A25633D1540400B208ERumour Has It
00000003 9815923C6D2E683000C208GTurning Tables
00000004 7D003FF752074C1800D208IDon't You Remember
00000005 AED739D8574AA4C500E209ASet Fire to the Rain
00000006 E755BCE1CF5CDEA700F209CHE Won't Go
00000007 6798C2AB0AFB257100G209ETake It All
00000008 962B35D1647DE75E00H209GI'll Be Waiting
00000009 D8A6C8FDC280217700I209IOne and Only
00000010 2502515DEB53501001{210ALovesong
00000011 E374BE6EE7C86B1D01A210CSomeone Like You
00000012 D4EB4EBF4651EF2001B210EI Found a Boy (Bonus Track)
00000013 CEC92B1BA3204A0A01C210GAdele 21 - A Track By Track Interview
00000014 6D4C2C7BA7E0159300A416IHold On
00000015 E241B09CC251C38600B417AI Found You
00000016 E74C16BCB319870C00C417CHang Loose
00000017 214ED5D95B84533C00D417ERise to the Sun
00000018 0E421AFCD141D22D00E417GYou Ain't Alone
00000019 FF47FB9E05DE896700F417IGoin' to the Party
00000020 5D46C681552440BF00G418AHeartbreaker
00000021 C54FE7792248562400H418CBoys &#38; Girls
00000022 8D4B5913F78CEEE300I418EBE Mine
00000023 B044D8ED2337A41201{418GI Ain't the Same
00000024 6E44D77A948E8A6D01A418IOn Your Way
00000025 BD48544197975CAB01B419AHeavy Chevy
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 52. SELCOPY/i - SDE CHAR.

## MAP/FMT Line-Command

- You may also use **MAP** or **FMT** as a line-command (typed in the prefix area) to display the marked line in formatted single-record mode.
- Alternatively press **F17 (Shift-F5)** to open a separate window displaying the focus record in formatted single-record (zoomed) mode.
- Note that on a standard 80-column screen **SELCOPYi** operates in *window-maximised mode* so that the new window will entirely obscure the original display.
- On a **wide screen** operating in **windowed mode**, the new window will open top-right justified, with the intention that both the table view and single record view are simultaneously visible.
- Significantly for **windowed mode**, multiple "zoomed" windows may be opened for different records, with the ability to **move** and **resize each window** as desired.

```
SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help WS WR Scroll> Csr
Command>
Record type: UnMapped Fixed(407) Offset=0 Data elements=1
UnMapped
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7
00000001 CB12DD714D51828C00A208CRolling In the Deep
00000002 2648A25633D1540400B208ERumour Has It
00000003 9815923C6D2E683000C208GTurning Tables
00000004 7D003FF752074C1800D208IDon't You Remember
00000005 AED739D8574AA4C500E209ASet Fire to the Rain
00000006 E755BCE1CF5CDEA700F209CHE Won't Go
00000007 6798C2AB0AFB257100G209ETake It All
00000008 962B35D1647DE75E00H209GI'll Be Waiting
00000009 D8A6C8FDC280217700I209IOne and Only
00000010 2502515DEB53501001{210ALovesong
MAP E374BE6EE7C86B1D01A210CSomeone Like You
00000012 D4EB4EBF4651EF2001B210EI Found a Boy (Bonus Track)
00000013 CEC92B1BA3204A0A01C210GAdele 21 - A Track By Track Interview
00000014 6D4C2C7BA7E0159300A416IHold On
00000015 E241B09CC251C38600B417AI Found You
00000016 E74C16BCB319870C00C417CHang Loose
00000017 214ED5D95884533C00D417ERise to the Sun
00000018 0E421AFCD141D22D00E417GYou Ain't Alone
00000019 FF47FB9E05DE896700F417IGoin' to the Party
00000020 5D46C681552440BF00G418AHeartbreaker
00000021 C54FE7792248562400H418CBoys &#38; Girls
00000022 8D4B5913F78CEEE300I418EBE Mine
00000023 B044D8ED2337A41201{418GI Ain't the Same
00000024 6E44D77A948E8A6D01A418ION Your Way
00000025 BD48544197975CAB01B419AHeavy Chevvy
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View
```

Figure 53. SELCOPYi - SDE MAP Line-Command.

```
SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help WS WR Scroll> Csr
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
Record> 00000011 Flags: f Length: 407
Ref Field Type <---+---1---+---2---+---3---+---4---+---5
#2 PERSISTENT-ID AN 1:16 E374BE6EE7C86B1D
#3 TRACK-NUM ZD 17:3 011
#4 TRACK-ID ZD 20:4 2103
#5 NAME AN 24:120 Someone Like You
51 - 100
101 - 120
#6 ARTIST AN 144:70 Adele
51 - 70
#7 ALBUM AN 214:70 21
51 - 70
#8 TOTAL-TIME FB 284:4 285240
#9 FILE-SIZE FB 288:4 -958995243
#10 BIT-RATE FB 292:2 256
#11 SAMPLE-RATE PD 294:3 44100
#12 YEAR ZD 297:4 2011
#13 NORMALIZATION PD 301:3 3362
#14 DISC-NUMBER ZD 304:3 001
#15 ALBUM-ARTIST AN 307:41 Adele
#16 RELEASE-DATE AN 348:20 2011-01-21T08:00:00Z
#17 DATE-ADDED AN 368:20 2012-08-02T11:30:36Z
#18 DATE-MODIFIED AN 388:20 2011-08-19T12:30:25Z
Se | Line=11 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vie
```

Figure 54. SELCOPYi - SDE ZOOM.

## Unformatted Single-Record (UNFMT) Display Mode

- Type **UNFMT** to set unformatted single-record display mode.
- Type **HEX** to toggle hexadecimal display on/off.
- Press **F7 / F8** to scroll along the length of a long record.
- Press **F10 / F11** to scroll the display to the previous/next record.

```

SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
Record type: UnMapped Fixed(407) Offset=0 Data elements=1
Record> 00000011 Flags: f Length: 407
Field <---+---1---+---2---+---3---+---4---+---5---+---6
UnMapped E374BE6EE7C86B1D01A210C Someone Like You
61 - 120
121 - 180
181 - 240 Adele 21
241 - 300
301 - 360 1 FOUN 201A
361 - 407 :00:00Z2012-08-02T11:30:36Z2011-08-19T12:30:25Z
2011-01-21T08
Se Line=11 Col=1 Alt=0,0;0 Size=1070 Recl=407 Fmt=F Files=1 Vie

```

Figure 55. SELCOPYi - SDE UNFMT.

## Hex Dump (HEXD) Display Mode

- Type **HEXD** to set hex-dump display mode.  
You may add the **NEW** parameter in order to open the display in a new window.
- Press **F7 / F8** to scroll along the length of a long record.
- Press **F10 / F11** to scroll the display to the previous/next record.
- Use the **SPM** command to show a popup menu providing display options for the hex-dump screen.  
Type **Help HEXD** for full information.
- The offset field on the first displayed line of data may also be overtyped in order to scroll the display to the specified offset within the record.
- While in multi-record (table) view the **HEXD** line-command may also be typed into record the prefix area to show the selected record in hex-dump format.

```

SELCOPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C)
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
Record type: UnMapped  Fixed(407) Offset=0 Data elements=1
Record> 00000011  Flags: f  Length: 407
000000 C5F3F7F4 C2C5F6C5 C5F7C3F8 F6C2F1C4 E374BE6EE7C86B1D
000010 F0F1C1F2 F1F0C3E2 96948596 958540D3 01A210C Someone L
000020 89928540 E896A440 40404040 40404040 40404040 ike You
000030 40404040 40404040 40404040 40404040
000040 40404040 40404040 40404040 40404040
000050 40404040 40404040 40404040 40404040
000060 40404040 40404040 40404040 40404040
000070 40404040 40404040 40404040 40404040
000080 40404040 40404040 40404040 404040C1
000090 84859385 40404040 40404040 40404040 dele
0000A0 40404040 40404040 40404040 40404040
0000B0 40404040 40404040 40404040 40404040
0000C0 40404040 40404040 40404040 40404040
0000D0 40404040 40F2F140 40404040 40404040 21
0000E0 40404040 40404040 40404040 40404040
0000F0 40404040 40404040 40404040 40404040
000100 40404040 40404040 40404040 40404040
000110 40404040 40404040 40404000 045A38C6 .!.F
000120 D6E4D501 0044100C F2F0F1C1 03362CF0 OUN. ...201A...0
000130 F0C1C184 85938540 40404040 40404040 0AAdele
000140 40404040 40404040 40404040 40404040
000150 40404040 40404040 404040F2 F0F1F160 2011-
000160 F0F160F2 F1E3F0F8 7AF0F07A F0F0E9F2 01-21T08:00:00Z2
000170 F0F1F260 F0F860F0 F2E3F1F1 7AF3F07A 012-08-02T11:30:
Se | Line=11 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vie

```

Figure 56. SELCOPYi - SDE HEXD.

## Formatted Multi-Record (VFMT) Display Mode

- Type **VFMT** to return to the default multi-record formatted display mode.

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
PERSISTENT-ID TRACK-NUM TRACK-ID NAME
#2 #3 #4 #5
AN 1:16 ZD 17:3 ZD 20:4 AN 24:120
<---+---1---+> <---> <---> <---+---1---+---2---+---3---
00000011 E3748E6EE7C86B1D 011 2103 Someone Like You
00000012 D4EB4EBF4651EF20 012 2105 I Found a Boy (Bonus Track)
00000013 CEC92B1BA3204A0A 013 2107 Adele 21 - A Track By Track Interv
00000014 6D4C2C7BA7E01593 001 4169 Hold On
00000015 E241B09CC251C386 002 4171 I Found You
00000016 E74C16BCB319870C 003 4173 Hang Loose
00000017 214ED5D95884533C 004 4175 Rise to the Sun
00000018 0E421AFCD141D22D 005 4177 You Ain't Alone
00000019 FF47FB9E05DE8967 006 4179 Goin' to the Party
00000020 5D46C681552440BF 007 4181 Heartbreaker
00000021 C54FE77922485624 008 4183 Boys &#38; Girls
00000022 8D485913F78CEEE3 009 4185 Be Mine
00000023 B044D08ED2337A412 010 4187 I Ain't the Same
00000024 6E44D77A948E8A6D 011 4189 On Your Way
00000025 BD48544197975CAB 012 4191 Heavy Chevy
00000026 0E9D90BEF653FB3D 001 2109 Converted
00000027 394900B434520082 002 2111 Speed Up the Sound of Loneliness
00000028 7CEC684D57FADD0B 003 2113 Woke Up This Morning
00000029 10FEE2A0203CF89B 004 2115 U Don't Dans 2 Tekno
00000030 7CB7FD20ADBE19AD 005 2117 Bourgeoisie Blues
00000031 417934474BD283DC 006 2119 Ain't Goin' to Goa
00000032 D776D98916C07D6A 007 2121 Mao Tse Tung Said
00000033 F21C824DDCD69F3 008 2123 Hypo Full of Love (The 12 Step Pla
Se | Line=11 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vie

```

Figure 57. SELCPYi - SDE VFMT.

## Controlling Table Headings

- A fixed heading displays the **Record Type** name. Other items on this line are described in the following table.

Item	Description
Fixed(n)	Displayed when the record-type is of a fixed length <b>n</b> .
Variable(n1,n2)	Displayed when the record-type may vary in length. Its lower length limit being <b>n1</b> . Its upper length limit being <b>n2</b> .
Offset=n	Indicates the offset (n) into the record at which record-type mapping is applied.
Data Elements=n	Indicates the number of fields (n) mapped by this record-type.

- The first **column heading** is fixed and displays the **Field Name**.
- Subsequent **column headings** are optional. The table below indicates the primary commands used to control each one.

Item	Description	Primary Commands
Field Number	Displays the field reference number ( <b>#n</b> ).	REF ON REF OFF
Data Type	Optionally displays one of the following: 1. A combination field of the format <b>data-type position:length</b> . e.g. <b>AN 111:30</b> 2. A combination field of the format <b>length/format</b> . e.g. <b>30/CHAR</b> 3. The position or offset defining the field's location within the record. e.g. <b>111</b> 4. The field's <b>picture string</b> . e.g. <b>X(30)</b>	TYPE ON TYPE OFF TYPE FMT TYPE OFFSET TYPE PIC
Scale	Displays the scale. Use command <b>OFST X</b> to display a hexadecimal offset scale.	SCALE ON SCALE OFF OFST P OFST X

## LAYOUT Command

- Type **LAYout** to display the current structure details in a separate list-window.
- Select the *Text* menu-bar item or type **TEXT** to place the information in a text-edit document window, which may be saved in the usual fashion.
- From the LAYOUT window, press **F3** to return to the edit/browse view.

```

SELCOPY/i - Layout from USER123.SELCTRN.SAM1(ZZST1CPC)
View Refresh Back Forward FDB Text Help
Command>
-----Name----- Picture RefNo Start -End- Length
1 TRACK Group 1 1 407 407
5 PERSISTENT-ID X(016) 2 1 16 16
5 TRACK-NUM S9(003) 3 17 19 3
5 TRACK-ID S9(004) 4 20 23 4
5 NAME X(120) 5 24 143 120
5 ARTIST X(070) 6 144 213 70
5 ALBUM X(070) 7 214 283 70
5 TOTAL-TIME S9(007) 8 284 287 4
5 FILE-SIZE S9(009) 9 288 291 4
5 BIT-RATE S9(004) 10 292 293 2
5 SAMPLE-RATE S9(005) 11 294 296 3
5 YEAR S9(004) 12 297 300 4
5 NORMALIZATION S9(005) 13 301 303 3
5 DISC-NUMBER S9(003) 14 304 306 3
5 ALBUM-ARTIST X(041) 15 307 347 41
5 RELEASE-DATE X(020) 16 348 367 20
5 DATE-ADDED X(020) 17 368 387 20
5 DATE-MODIFIED X(020) 18 388 407 20

Line 1 of 18 | Col 1 of 50 | Views 1 | select *
  
```

Figure 58. SELCOPYi - SDE VFMT.

## Scrolling the Display to a specific field/record.

### Locating a Field

- Use the **LOCATE** command to scroll a formatted (either multi- or single-record) display to a specific field. LOCATE may be abbreviated to **L**.
- Field names may be abbreviated.
- The field may be referred to either by its name or by its field reference number, e.g. using the supplied sample COBOL copybook the following commands are functionally equivalent.
  - ◆ L SAMP
  - ◆ L #11

The result of issuing either of these commands from a VFMT display is shown below.

- The parameters **FIRST**, **LAST**, **NEXT** or **PREV** may optionally be added to the command, with **NEXT** being the default.

```

SELCPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: TRACK  Fixed(407) Offset=0 Data elements=18
      SAMPLE-RATE      YEAR  NORMALIZATION  DISC-NUMBER  ALBUM-ARTIST
      #11      #12      #13      #14  #15
      PD 294:3  ZD 297:4      PD 301:3      ZD 304:3  AN 307:41
      <---+>      <--->      <---+>      <-->      <---+---1---+---2---
00000001      44100      2011      5151      001 Adele
00000002      44100      2011      7474      001 Adele
00000003      44100      2011      6529      001 Adele
00000004      44100      2011      5189      001 Adele
00000005      44100      2011      9255      001 Adele
00000006      44100      2011      3374      001 Adele
00000007      44100      2011      3615      001 Adele
00000008      44100      2011      10626     001 Adele
00000009      44100      2011      4629      001 Adele
00000010      44100      2011      2020      001 Adele
00000011      44100      2011      3362      001 Adele
00000012      44100      2011      3893      001 Adele
00000013      0      2011      0      000 Adele
00000014      44100      2012      4808      001 Alabama Shakes
00000015      44100      2012      6070      001 Alabama Shakes
00000016      44100      2012      5761      001 Alabama Shakes
00000017      44100      2012      7294      001 Alabama Shakes
00000018      44100      2012      7353      001 Alabama Shakes
00000019      44100      2012      2058      001 Alabama Shakes
00000020      44100      2012      9197      001 Alabama Shakes
00000021      44100      2012      1145      001 Alabama Shakes
00000022      44100      2012      6287      001 Alabama Shakes
00000023      44100      2012      8411      001 Alabama Shakes
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 59. SELCPYi - SDE LOCATE field.

## Locating a Record

- Use the **LOCATE nnn** command to scroll to a specific record number **nnn**.
- Alternatively you may use **:nnn**  
e.g. the following commands are functionally equivalent.
  - ♦ L 1001
  - ♦ :1001
 The result of issuing either of these commands from a VFMT display is shown below.
- The LOCATE command may also be used to
  - ♦ scroll a VSAM ESDS to the record at a specific RBA.
  - ♦ scroll a VSAM KSDS to the record at a specific key, partial key or RBA.
- Type **Help Locate** for full information.

```

SELCOPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: TRACK  Fixed(407) Offset=0 Data elements=18
  #2      #3      #4      #5
AN 1:16  ZD 17:3  ZD 20:4  AN 24:120
<---+---1---+>  <-->  <--->  <---+---1---+---2---+---3---
00001001 4D17E66D893AE49E 005 1969 Vagabond of the Western World
00001002 D48D5001F4E2E9F0 010 1973 Black Boys on the Corner
00001003 92AC52CA6ACFEDFE 011 1975 Randolph's Tango
00001004 90559B50A6E0F362 012 1977 Broken Dreams
00001005 8A6F1BD714A9CEA6 006 1971 Little Girl In Bloom
00001006 C19C990E8700067B 005 4287 50 Ways to Say Goodbye
00001007 43EED60467C11B25 003 4479 Drops of Jupiter
00001008 A02159C78BD2DB08 001 4289 Hey, Soul Sister
00001009 D0CAE063307BE777 003 2015 When I Look To The Sky
00001010 B0F4DD08C25311E8 002 4291 Ordinary
00001011 E0E14542481D9232 001 2007 Calling All Angels - Radio Version
00001012 1164825C5AD2CC49 001 3893 Blue Hour
00001013 BCA7AB8D236B0F94 002 3895 Average Man
00001014 DE2FF2860345143D 003 3897 Long Distance
00001015 8E1B2E243367374B 004 3899 Self Help
00001016 0BF4067BF1653873 005 3901 Falling Down
00001017 9C5EA59620F7E953 006 3903 Stone Thrown
00001018 A593C29E5F969670 007 3905 Clear Blue Air
00001019 F0B61DAA1CF007A8 008 3907 Pain Killer (Summer Rain)
00001020 5DFA5E0D57590C8F 009 3909 Full Of Stars
00001021 1D5C6B0F4E3F51AF 010 3911 Panic Attack
00001022 78FF0C2A18C3FB36 011 3913 Little Brother
00001023 45D95EB9E8EB45C3 012 3915 Rain City
Se | Line=1001 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | V

```

Figure 60. SELCOPYi - SDE LOCATE record.



## Selecting/Ordering Visible Fields

- Type **SElect** followed by a comma separated list of fields in order to restrict the display to those fields of particular interest.
- Fields may be referred to either by their name or by their field reference number.
- Type either of the following commands to produce the results displayed below.
  - ♦ **SEL TRACK-NUM,ALBUM,ARTIST,NAME**
  - ♦ **SEL #3,#7,ARTIST,NAME**

```

SELCOPY/i - Edit  USER123.SELCTR.N.ZZST1DAT using USER123.SELCTR.N.SAM1(ZZST10)
File Edit Actions Options Utilities Window SwapList Help  WS WR  Scroll> Csr
Command>
Record type: TRACK      Fixed(407) Offset=0 Data elements=18
      TRACK-NUM  ALBUM
      #3        #7
      ZD 17:3   AN 214:70
      <--> <--+---1---+---2---+---3---+---4---+---5---+---6
000000001      001 21
000000002      002 21
000000003      003 21
000000004      004 21
000000005      005 21
000000006      006 21
000000007      007 21
000000008      008 21
000000009      009 21
000000010      010 21
000000011      011 21
000000012      012 21
000000013      013 21
000000014      001 Boys &#38; Girls
000000015      002 Boys &#38; Girls
000000016      003 Boys &#38; Girls
000000017      004 Boys &#38; Girls
000000018      005 Boys &#38; Girls
000000019      006 Boys &#38; Girls
000000020      007 Boys &#38; Girls
000000021      008 Boys &#38; Girls
000000022      009 Boys &#38; Girls
000000023      010 Boys &#38; Girls
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 61. SELCOPYi - SDE SELECT 1.

- The following results will be displayed after scrolling right once.

```

SELCOPY/i - Edit  USER123.SELCTR.N.ZZST1DAT using USER123.SELCTR.N.SAM1(ZZST10)
File Edit Actions Options Utilities Window SwapList Help  WS WR  Scroll> Csr
Command>
Record type: TRACK      Fixed(407) Offset=0 Data elements=18
      ALBUM      ARTIST
      #7        #6
      AN 214:70  AN 144:70
      ----+----> <--+---1---+---2---+---3---+---4---+---5---+---
000000001      Adele
000000002      Adele
000000003      Adele
000000004      Adele
000000005      Adele
000000006      Adele
000000007      Adele
000000008      Adele
000000009      Adele
000000010      Adele
000000011      Adele
000000012      Adele
000000013      Adele
000000014      Alabama Shakes
000000015      Alabama Shakes
000000016      Alabama Shakes
000000017      Alabama Shakes
000000018      Alabama Shakes
000000019      Alabama Shakes
000000020      Alabama Shakes
000000021      Alabama Shakes
000000022      Alabama Shakes
000000023      Alabama Shakes
Se | Line=1 | Col=61 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 62. SELCOPYi - SDE SELECT 2.

- Type **SElect \*** to reset the display to show all fields in their default order

## Preventing Fields from Scrolling Off-screen (HOLD)

- By adding the **Hold** keyword following the field-name/ref, that field will be prevented from scrolling off the screen.
- **HOLD** need only be specified once i.e. for the last (right-most) of a sequence of held fields.
- Type the following command to produce the results displayed below.  
**SEL #3 HOLD,#5,ALBUM,ARTIST**
- Held fields are highlighted in a different colour.  
Type **Help COLOUR** for full information.

```

-SELCPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: TRACK      Fixed(407) Offset=0 Data elements=18
      TRACK-NUM  NAME
      #3 #5
      ZD 17:3 AN 24:120
      <--> <--+---1---+---2---+---3---+---4---+---5---+---6
000000001      001 Rolling In the Deep
000000002      002 Rumour Has It
000000003      003 Turning Tables
000000004      004 Don't You Remember
000000005      005 Set Fire to the Rain
000000006      006 He Won't Go
000000007      007 Take It All
000000008      008 I'll Be Waiting
000000009      009 One and Only
000000010      010 Lovesong
000000011      011 Someone Like You
000000012      012 I Found a Boy (Bonus Track)
000000013      013 Adele 21 - A Track By Track Interview
000000014      001 Hold On
000000015      002 I Found You
000000016      003 Hang Loose
000000017      004 Rise to the Sun
000000018      005 You Ain't Alone
000000019      006 Goin' to the Party
000000020      007 Heartbreaker
000000021      008 Boys & Girls
000000022      009 Be Mine
000000023      010 I Ain't the Same
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 63. SELCPYI - SDE SELECT 3.

## Adding All Previously Unselected Fields to the Display

- By adding the pseudo-field **asterisk (\*)** to the end of the SELECT command, all previously unselected fields will be included in their default order.
- Type the following command then scroll right to produce the results displayed below.  
**SEL #3 H,#5,ALBUM,ARTIST,\***

TRACK-#3	SAMPLE-RATE #11	YEAR #12	NORMALIZATION #13	DISC-NUMBER #14	ALBUM-ARTIST #15
00000001	001	44100	2011	5151	001 Adele
00000002	002	44100	2011	7474	001 Adele
00000003	003	44100	2011	6529	001 Adele
00000004	004	44100	2011	5189	001 Adele
00000005	005	44100	2011	9255	001 Adele
00000006	006	44100	2011	3374	001 Adele
00000007	007	44100	2011	3615	001 Adele
00000008	008	44100	2011	10626	001 Adele
00000009	009	44100	2011	4629	001 Adele
00000010	010	44100	2011	2020	001 Adele
00000011	011	44100	2011	3362	001 Adele
00000012	012	44100	2011	3893	001 Adele
00000013	013	0	2011	0	000 Adele
00000014	001	44100	2012	4808	001 Alabama Shake
00000015	002	44100	2012	6070	001 Alabama Shake
00000016	003	44100	2012	5761	001 Alabama Shake
00000017	004	44100	2012	7294	001 Alabama Shake
00000018	005	44100	2012	7353	001 Alabama Shake
00000019	006	44100	2012	2058	001 Alabama Shake
00000020	007	44100	2012	9197	001 Alabama Shake
00000021	008	44100	2012	1145	001 Alabama Shake
00000022	009	44100	2012	6287	001 Alabama Shake
00000023	010	44100	2012	8411	001 Alabama Shake

Figure 64. SELCOPY/i - SDE SELECT 4.

## Adjusting Field Display Column-widths

- Use **COLWidth** command to control the number of characters occupied by any particular field.
- Type the following sequence of commands to produce the results below.
  - ♦ **SEL #3,#5 H,ALBUM,ARTIST,\***
  - ♦ **COLW NAME 20**
  - ♦ **COLW #7 20**
  - ♦ **COLW #6 18**

```

SELCOPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: TRACK      Fixed(407) Offset=0 Data elements=18
      TRACK-NUM  NAME      ALBUM      ARTIST
      #3      #5      #7      #6
      ZD 17:3 AN 24:120 AN 214:70 AN 144:70
      <---> <---+-----1-----> <---+-----1-----> <---+-----1----->
000000001      001 Rolling In the Deep      21      Adele
000000002      002 Rumour Has It      21      Adele
000000003      003 Turning Tables      21      Adele
000000004      004 Don't You Remember      21      Adele
000000005      005 Set Fire to the Rain      21      Adele
000000006      006 He Won't Go      21      Adele
000000007      007 Take It All      21      Adele
000000008      008 I'll Be Waiting      21      Adele
000000009      009 One and Only      21      Adele
000000010      010 Lovesong      21      Adele
000000011      011 Someone Like You      21      Adele
000000012      012 I Found a Boy (Bonus      21      Adele
000000013      013 Adele 21 - A Track B      21      Adele
000000014      001 Hold On      Boys &#38; Girls      Alabama Shakes
000000015      002 I Found You      Boys &#38; Girls      Alabama Shakes
000000016      003 Hang Loose      Boys &#38; Girls      Alabama Shakes
000000017      004 Rise to the Sun      Boys &#38; Girls      Alabama Shakes
000000018      005 You Ain't Alone      Boys &#38; Girls      Alabama Shakes
000000019      006 Goin' to the Party      Boys &#38; Girls      Alabama Shakes
000000020      007 Heartbreaker      Boys &#38; Girls      Alabama Shakes
000000021      008 Boys &#38; Girls      Boys &#38; Girls      Alabama Shakes
000000022      009 Be Mine      Boys &#38; Girls      Alabama Shakes
000000023      010 I Ain't the Same      Boys &#38; Girls      Alabama Shakes
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 65. SELCOPYi - SDE VFMT.

After pressing **F11** the display will be updated as follows.

```

SELCOPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: TRACK      Fixed(407) Offset=0 Data elements=18
      TRACK-NUM  NAME      PERSISTENT-ID      TRACK-ID      TOTAL-TIME
      #3      #5      #2      #4      #8
      ZD 17:3 AN 24:120 AN 1:16      ZD 20:4      FB 284:4
      <---> <---+-----1-----> <---+-----1-----> <---+-----1----->
000000001      001 Rolling In the Deep      CB12DD714D51828C      2083      228093
000000002      002 Rumour Has It      2648A25633D15404      2085      223266
000000003      003 Turning Tables      9815923C6D2E6830      2087      250000
000000004      004 Don't You Remember      7D003FF752074C18      2089      243200
000000005      005 Set Fire to the Rain      AED739D8574AA4C5      2091      242973
000000006      006 He Won't Go      E755BCE1CF5CDEA7      2093      278040
000000007      007 Take It All      6798C2AB0AFB2571      2095      228293
000000008      008 I'll Be Waiting      962B35D1647DE75E      2097      241351
000000009      009 One and Only      D8A6C8FDC2802177      2099      348226
000000010      010 Lovesong      2502515DEB535010      2101      316240
000000011      011 Someone Like You      E374BE6EE7C86B1D      2103      285240
000000012      012 I Found a Boy (Bonus      D4EB4EBF4651EF20      2105      217338
000000013      013 Adele 21 - A Track B      CEC92B1BA3204A0A      2107      875000
000000014      001 Hold On      6D4C2C7BA7E01593      4169      226186
000000015      002 I Found You      E241B09CC251C386      4171      179653
000000016      003 Hang Loose      E74C16BCB319870C      4173      144200
000000017      004 Rise to the Sun      214ED5D95884533C      4175      188613
000000018      005 You Ain't Alone      0E421AFCD141D22D      4177      284600
000000019      006 Goin' to the Party      FF47FB9E05DE8967      4179      105653
000000020      007 Heartbreaker      5D46C681552440BF      4181      227440
000000021      008 Boys &#38; Girls      C54FE77922485624      4183      205986
000000022      009 Be Mine      8D4B5913F78CEEE3      4185      254760
000000023      010 I Ain't the Same      B044D8ED2337A412      4187      175800
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 66. SELCOPYi - SDE VFMT.

## The SELECT panel

- The **SELECT** panel provides an interactive alternative to typing both the SELECT and COLWIDTH primary commands.

During Data-Edit/Browse, the SELECT panel may be started for the focus record-type using any of the following methods:

- Type **SELECT** (SEL) from the command line.
- Type **SEL** in the prefix area.
- Press the **Options** key (default is F16), then select option 8.

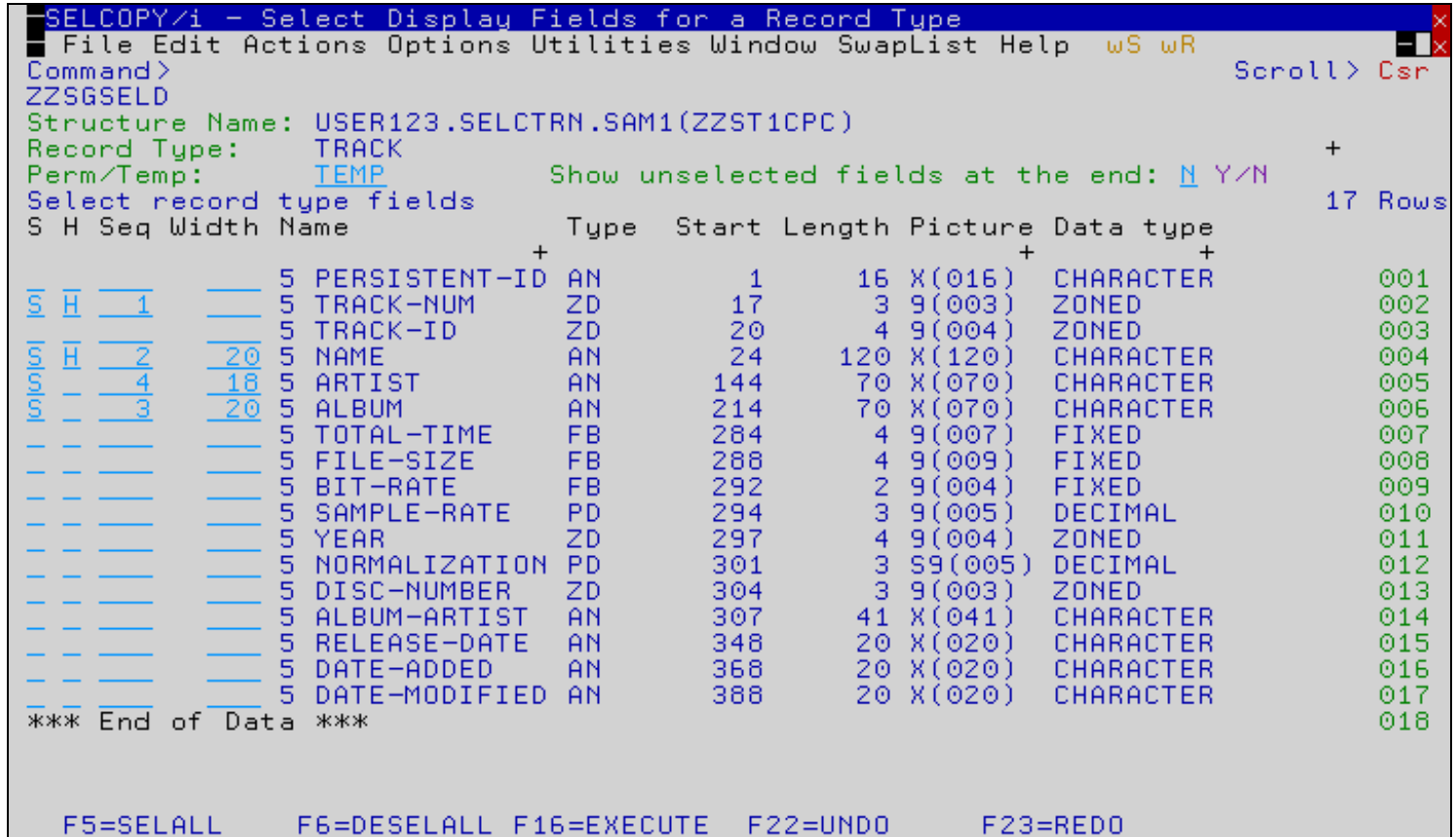


Figure 67. SELCOPY/i - SDE SELECT panel.

- Enter S in the "S" column to make a field visible.
- Enter H in the "H" column to HOLD a field.
- Enter a number in the "Seq" to control the order of visible fields.
- Enter a number in the "Width" to control the column width of a field.
- Selected fields that are not given an explicit Sequence number will be displayed in the order they appear in the panel table.
- The panel table may be manipulated using standard line-commands entered into the numeric "suffix" area on the right hand side of each table row. Table rows may be moved or excluded, but not deleted.
- Use primary command **SELALL** (on function key **F5** by default) to select all (unexcluded) fields.
- Use primary command **DESELALL** (on function key **F6** by default) to deselect all (unexcluded) fields.
- Use primary command **RESET** without parameters to reset (to blank) all enterable columns, or add the column name to reset each individual column. e.g. *RES H*
- Selecting **Y** in the "Show unselected fields at the end" option is the equivalent of adding ",\*" to the end of the SELECT command, as discussed earlier.
- If option **PERM** is selected then the select/colwidth combination will be saved in the applied structure (SDO). If mapping direct from a COBOL/PL1 copybook then you will be prompted to create a structure or continue without saving.
- Panel input will be obeyed on normal (F3) exit. The **EXECUTE** (EXEC) primary command (on function key **F16** by default) may be used to obey input without exiting the panel. This is particularly useful when running in "windowed" display mode on a large dynamic screen, where both the SELECT panel and the Data-Edit window to which it will apply are simultaneously visible.

## Using FIND, EXCLUDE and ONLY commands

### Searching for Data (FIND/F)

Type the following commands to produce the results displayed below.

- SEL \*
- L 1
- F HEART

Press **F5** (RFIND) to search for the next occurrence.

```

SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
PERSTENT-ID TRACK-NUM TRACK-ID NAME ARTIST
#2 #3 #4 #5 #6
AN 1:16 ZD 17:3 ZD 20:4 AN 24:120 AN 144:70
<---+---1---+> <--> <---+---1---+---> <---+---1---
00000001 CB12DD714D51828C 001 2083 Rolling In the Deep Adele
00000002 2648A25633D15404 002 2085 Rumour Has It Adele
00000003 9815923C6D2E6830 003 2087 Turning Tables Adele
00000004 7D003FF752074C18 004 2089 Don't You Remember Adele
00000005 AED739D8574AA4C5 005 2091 Set Fire to the Rain Adele
00000006 E755BCE1CF5CDEA7 006 2093 He Won't Go Adele
00000007 6798C2AB0AFB2571 007 2095 Take It All Adele
00000008 962B35D1647DE75E 008 2097 I'll Be Waiting Adele
00000009 D8A6C8FDC2802177 009 2099 One and Only Adele
00000010 2502515DEB535010 010 2101 Lovesong Adele
00000011 E3748E6EE7C86B1D 011 2103 Someone Like You Adele
00000012 D4EB4EBF4651EF20 012 2105 I Found a Boy (Bonus Adele
00000013 CEC92B1BA3204A0A 013 2107 Adele 21 - A Track B Adele
00000014 6D4C2C7BA7E01593 001 4169 Hold On Alabama Shake
00000015 E241B09CC251C386 002 4171 I Found You Alabama Shake
00000016 E74C16BCB319870C 003 4173 Hang Loose Alabama Shake
00000017 214ED5D95884533C 004 4175 Rise to the Sun Alabama Shake
00000018 0E421AFCD141D22D 005 4177 You Ain't Alone Alabama Shake
00000019 FF47FB9E05DE8967 006 4179 Goin' to the Party Alabama Shake
00000020 5D46C681552440BF 007 4181 Heartbreaker Alabama Shake
00000021 C54FE77922485624 008 4183 Boys & #38; Girls Alabama Shake
00000022 8D4B5913F78CEEE3 009 4185 Be Mine Alabama Shake
00000023 B044D8ED2337A412 010 4187 I Ain't the Same Alabama Shake
Se Line=1 Col=1 Alt=0,0;0 Size=1070 Recl=407 Fmt=F Files=1 View

```

Figure 68. SELCOPYi - SDE FIND 1.

## Restricting the Search to a Specific Field

The search may be restricted to a specific field e.g.

### • F ALABAMA #5

If fields are to be referred to by name, then they must be specified in brackets e.g.

### • F ALABAMA (ARTIST)

If none are specified then the search will be restricted to those fields specified by the most recent SELECT command, provided one has been issued. Otherwise all fields will be searched in their default order.

```

-SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
PERSISTENT-ID TRACK-NUM TRACK-ID NAME ARTIST
#2 #3 #4 #5 #6
AN 1:16 ZD 17:3 ZD 20:4 AN 24:120 AN 144:70
<---+---1---+> <--> <---> <---+---1---+> <---+---1---
00000653 7A380D28DA910A7B 001 3363 Sweet Home Alabama Lynyrd Skynyrd
00000654 FA976D14F7EEF623 002 3339 I Ain't the One Lynyrd Skynyrd
00000655 7D828FF66DE1B03D 002 3365 Crossroads Lynyrd Skynyrd
00000656 8FE27D812957B9A5 003 3341 Saturday Night Speci Lynyrd Skynyrd
00000657 6BC665A358DB5475 003 3367 Free Bird (Undubbed) Lynyrd Skynyrd
00000658 25533C315171FCE5 004 3343 Searching Lynyrd Skynyrd
00000659 F06C5E8FF9E73897 004 3369 Introduction By Alex Lynyrd Skynyrd
00000660 F6775CC2575D9F02 005 3371 I Ain't the One (Alt Lynyrd Skynyrd
00000661 8F12ADF0A2D03C4B 005 3345 Travellin' Man Lynyrd Skynyrd
00000662 1C83C54551DA904B 006 3373 Searchin' (Alternate Lynyrd Skynyrd
00000663 3A8D35D8E4E94317 006 3347 Simple Man Lynyrd Skynyrd
00000664 AF1B4500D8892FE5 007 3375 Gimme Three Steps Lynyrd Skynyrd
00000665 90B364BC56E5D4D9 007 3349 Whiskey Rock-A-Rolle Lynyrd Skynyrd
00000666 FB62E8C234527D6E 008 3351 The Needle and the S Lynyrd Skynyrd
00000667 94627829ECA49843 008 3377 Call Me the Breeze Lynyrd Skynyrd
00000668 458342D207B0BC77 009 3353 Gimme Back My Bullet Lynyrd Skynyrd
00000669 8D0B7C18B78DE112 009 3379 Sweet Home Alabama ( Lynyrd Skynyrd
00000670 867C61A98F5AC380 010 3381 Crossroads (Alternat Lynyrd Skynyrd
00000671 94EE123CE522DEF4 010 3355 Tuesday's Gone Lynyrd Skynyrd
00000672 4F8AF925660E6850 011 3357 Gimme Three Steps Lynyrd Skynyrd
00000673 30956502EC125D30 011 3383 Free Bird Lynyrd Skynyrd
00000674 3B3298C3172E369E 012 3359 Call Me the Breeze Lynyrd Skynyrd
00000675 3CF5025D22F1607E 013 3361 T for Texas (Blue Yo Lynyrd Skynyrd
Se | Line=653 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vi

```

Figure 69. SELCOPYi - SDE FIND 2.



## Restricting the Search to a List of Fields

- The search may be restricted to a list of comma separated fields e.g.  
♦ **F ALABAMA #5,#6**
- Again, if fields are to be referred to by name, then they must be specified in brackets e.g.  
♦ **F ALABAMA (NAME,ARTIST)**

```

SELCPY/I - Edit USER123.SELCTR.N.ZZST1DAT using USER123.SELCTR.SAM1(ZZST10X
File Edit Actions Options Utilities Window SwapList Help wS wR - - - - -
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18

```

	PERSISTENT-ID	TRACK-NUM	TRACK-ID	NAME	ARTIST
	#2	#3	#4	#5	#6
	AN 1:16	ZD 17:3	ZD 20:4	AN 24:120	AN 144:70
	<---+-----1-----+>	<-->	<--->	<---+-----1-----+----->	<---+-----1----->
000000001	CB12DD714D51828C	001	2083	Rolling In the Deep	Adele
000000002	2648A25633D15404	002	2085	Rumour Has It	Adele
000000003	9815923C6D2E6830	003	2087	Turning Tables	Adele
000000004	7D003FF752074C18	004	2089	Don't You Remember	Adele
000000005	AED739D8574AA4C5	005	2091	Set Fire to the Rain	Adele
000000006	E7558CE1CF5CDEA7	006	2093	He Won't Go	Adele
000000007	6798C2AB0AFB2571	007	2095	Take It All	Adele
000000008	962835D1647DE75E	008	2097	I'll Be Waiting	Adele
000000009	D8A6C8FDC2802177	009	2099	One and Only	Adele
000000010	2502515DEB535010	010	2101	Lovesong	Adele
000000011	E3748E6EE7C86B1D	011	2103	Someone Like You	Adele
000000012	D4EB4EBF4651EF20	012	2105	I Found a Boy (Bonus	Adele
000000013	CEC92B1BA3204A0A	013	2107	Adele 21 - A Track B	Adele
000000014	6D4C2C7BA7E01593	001	4169	Hold On	Alabama Shake
000000015	E2418093C251C386	002	4171	I Found You	Alabama Shake
000000016	E74C168CB319870C	003	4173	Hang Loose	Alabama Shake
000000017	214ED5D95B84533C	004	4175	Rise to the Sun	Alabama Shake
000000018	0E421AFCD414D22D	005	4177	You Ain't Alone	Alabama Shake
000000019	FF47FB9E05DE8967	006	4179	Goin' to the Party	Alabama Shake
000000020	5D46C681552440BF	007	4181	Heartbreaker	Alabama Shake
000000021	C54FE7792248562A	008	4183	Boys & #38; Girls	Alabama Shake
000000022	8D485913F78CEEE3	009	4185	Be Mine	Alabama Shake
000000023	B044D8E2337A412	010	4187	I Ain't the Same	Alabama Shake

```

Se | Line=1 | Col=1 | Alt=0.0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 70. SELCOPYi - SDE FIND 3.

## Restricting the Search to a Range of Fields

- A range of fields may also be specified by separating the start and end field with a colon e.g.  
♦ **F ALABAMA #2:#6**
- Again, if any field is to be referred to by name, then they must be specified in brackets e.g.  
♦ **F ALABAMA (#2:ARTIST)**
- Type **Help Change** for full information.



## Excluding Records Based on Field Content (EXCLUDE/X)

- The **EXCLUDE** command takes the same parameters as **FIND** e.g.  
 ♦ **X ALL ALABAMA #5,#6**

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
ZZSD187I 27 lines of record type TRACK containing string "alabama" were
excluded.
#2 #3 #4 #5 #6
AN 1:16 ZD 17:3 ZD 20:4 AN 24:120 AN 144:70
<---+---1---+> <--> <---> <---+---1---+> <---+---1---
00000001 CB12DD714D51828C 001 2083 Rolling In the Deep Adele
00000002 2648A25633D15404 002 2085 Rumour Has It Adele
00000003 9815923C6D2E6830 003 2087 Turning Tables Adele
00000004 7D003FF752074C18 004 2089 Don't You Remember Adele
00000005 AED739D8574AA4C5 005 2091 Set Fire to the Rain Adele
00000006 E7558CE1CF5CDEA7 006 2093 He Won't Go Adele
00000007 6798C2AB0AFB2571 007 2095 Take It All Adele
00000008 962835D1647DE75E 008 2097 I'll Be Waiting Adele
00000009 D8A6C8FDC2802177 009 2099 One and Only Adele
00000010 2502515DEB535010 010 2101 Lovesong Adele
00000011 E374BE6EE7C86B1D 011 2103 Someone Like You Adele
00000012 D4EB4EBF4651EF20 012 2105 I Found a Boy (Bonus Adele
00000013 CEC92B1BA3204A0A 013 2107 Adele 21 - A Track B Adele
00000014 ----- 24 line(s) excluded: record type TRACK -----
00000038 3042FAD7E89FCDF3 016 2133 Uninvited Alanis Moriss
00000039 D1EF53B14D5A4790 001 2135 All I Really Want Alanis Moriss
00000040 02EACE532929B38F 002 2137 You Oughta Know Alanis Moriss
00000041 C63A3B24D837898D 003 2139 Perfect Alanis Moriss
00000042 B26EEC33174DCC60 004 2141 Hand In My Pocket Alanis Moriss
00000043 8276C65D2939EE38 005 2143 Right Through You Alanis Moriss
00000044 74E398087479A309 006 2145 Forgiveness Alanis Moriss
00000045 D6876CE5B59004CF 007 2147 You Learn Alanis Moriss
00000046 AF138361B3B3E268 008 2149 Head Over Feet Alanis Moriss
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 71. SELCPYi - SDE EXCLUDE.

## Excluding Records Based on Field Content (ONLY/O)

- The **ONLY** primary command may be used to display only the matching records and also takes the same parameters as **FIND** e.g.  
 ♦ **ONLY ALABAMA #5,#6**
- **ONLY** may be abbreviated to **O**.
- The **ALL** parameter is unnecessary (and therefore illegal) on the **ONLY** command.
- Use the **ALL** primary command (with no parameters) to redisplay any excluded records.

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help WS WR Scroll> Csr
Command>
ZZSD186I 27 occurrences of string "alabama" were found in records of type
TRACK.

```

PERSISTENT-ID	TRACK-NUM	TRACK-ID	NAME	ARTIST
#2	#3	#4	#5	#6
AN 1:16	ZD 17:3	ZD 20:4	AN 24:120	AN 144:70
<---+---1---+>	<-->	<-->	<---+---1---+>	<---+---1---
00000014 6D4C2C7BA7E01593	001	4169	Hold On	Alabama Shake
00000015 E241B09CC251C386	002	4171	I Found You	Alabama Shake
00000016 E74C16BCB319870C	003	4173	Hang Loose	Alabama Shake
00000017 214ED5D95884533C	004	4175	Rise to the Sun	Alabama Shake
00000018 0E421AFCD141D22D	005	4177	You Ain't Alone	Alabama Shake
00000019 FF47FB9E05DE8967	006	4179	Goin' to the Party	Alabama Shake
00000020 5D46C681552440BF	007	4181	Heartbreaker	Alabama Shake
00000021 C54FE77922485624	008	4183	Boys & #38; Girls	Alabama Shake
00000022 8D4B5913F78CEEE3	009	4185	Be Mine	Alabama Shake
00000023 B044D8ED2337A412	010	4187	I Ain't the Same	Alabama Shake
00000024 6E44D77A948E8A6D	011	4189	On Your Way	Alabama Shake
00000025 BD48544197975CAB	012	4191	Heavy Chevy	Alabama Shake
00000026 0E9D90BEF653FB3D	001	2109	Converted	Alabama 3
00000027 394900B434520082	002	2111	Speed Up the Sound o	Alabama 3
00000028 7CEC684D57FADD0B	003	2113	Woke Up This Morning	Alabama 3
00000029 10FEE2A0203CF89B	004	2115	U Don't Dans 2 Tekno	Alabama 3
00000030 7CB7FD20ADBE19AD	005	2117	Bourgeoisie Blues	Alabama 3
00000031 4179344748D283DC	006	2119	Ain't Goin' to Goa	Alabama 3
00000032 D776D98916C07D6A	007	2121	Mao Tse Tung Said	Alabama 3
00000033 F21C824DDCDD69F3	008	2123	Hypo Full of Love (T	Alabama 3
00000034 84788B78C8571DC9	009	2125	The Old Purple Tin (	Alabama 3
00000035 B6787CDA1A22AAA6	010	2127	The Night We Nearly	Alabama 3

```

Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 72. SELCPYI - SDE ONLY 1.

## Searching Numeric Data-Type Fields

- Numeric fields may also be searched without needing to be concerned about the underlying data-type (i.e. zoned-decimal, packed-decimal, binary or floating-point). e.g.
  - ◆ **ONLY 1 (TRACK-NUM)**
- Type **HIDE** to suppress display of shadow records.
- Type **RES HIDE** or **SHAD ON** resume display of shadow records.

```

-SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll>
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
  TRACK-NUM TRACK-ID NAME ARTIST
  #2 #3 #4 #5 #6
  AN 1:16 ZD 17:3 ZD 20:4 AN 24:120 AN 144:70
  <---+---1---+> <--> <---> <---+---1---+---> <---+---1---
00000001 CB12DD714D51828C 001 2083 Rolling In the Deep Adele
00000014 6D4C2C7BA7E01593 001 4169 Hold On Alabama Shake
00000026 0E9D90BEF653FB3D 001 2109 Converted Alabama 3
00000039 D1EF53B14D5A4790 001 2135 All I Really Want Alanis Moriss
00000052 ADDD7342D220CF76 001 7973 Mitzi Alex Harvey
00000061 498B4E8E921A948F 001 4407 Hells Bells AC/DC
00000071 043219699220BB08 001 2053 Rock 'N Roll Train AC/DC
00000086 8D9AD7F812B6E6CB 001 4349 Dirty Deeds Done Dir AC/DC
00000096 1ED550900D5C62FD 001 4337 It's A Long Way To T AC/DC
00000107 62ED978238D09CFE 001 4391 Highway To Hell AC/DC
00000119 B5715E2E8212B99E 001 4365 Go Down AC/DC
00000126 3A2C9735E5A76418 001 4379 Rock 'N' Roll Damnat AC/DC
00000137 244EF5D18EB0FF6A 001 4205 Blowin' In the Wind Bob Dylan
00000138 A9F9DB70A52F83F0 001 4257 Shelter from the Sto Bob Dylan
00000174 4B1E571BFAF437F2 001 2171 Red Headed Woman Bruce Springs
00000187 F4FD7E6EA8695B06 001 2529 Dead Man Walkin' Bruce Springs
00000188 67383B3AA37BF798 001 2197 Devils &#38; Dust Bruce Springs
00000190 BB3105139E236692 001 2201 Human Touch Bruce Springs
00000192 F3A02A1F4EB809E0 001 2205 Better Days Bruce Springs
00000196 53A457A18E068EFF 001 2211 The Ghost of Tom Joa Bruce Springs
00000209 E1408BA528E0A3D3 001 2235 Racing In the Street Bruce Springs
00000230 FDDF99D83FBB06D9 001 2277 The Wrestler Bruce Springs
00000231 63BEA82C58843DB4 001 2281 Leavin' Train Bruce Springs
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 73. SELCPYi - SDE ONLY 2.

## Using a Relational Operator (EQ/NE/GT/GE/LT/LE)

- A relational operator (defaulting to EQ) may also be specified before the search value. Supported operators are as follow:

Operator	Description
EQ	Data must be equal to <i>value</i> . (Default)
NE	Data must be not equal to <i>value</i> .
GT	Data must be greater than <i>value</i> .
GE	Data must be greater than or equal to <i>value</i> .
LT	Data must be less than <i>value</i> .
LE	Data must be less than or equal to <i>value</i> .

- Type the following commands to produce the results displayed below, illustrating record selection based on the content of the **binary** numeric field *BIT-RATE*.
  - ◆ SEL BIT-RATE,\*
  - ◆ ONLY GT 300 (BIT-RATE)

```

SELCPY/i - Edit  USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: TRACK      Fixed(407) Offset=0 Data elements=18
      BIT-RATE  #10 #2  TRACK-#3  TRACK-#4  NAME
      FB 292:2  AN 1:16  ZD 17:3  ZD 20:4  AN 24:120
      <---+> <---+-----1-----+> <--> <---+-----1-----+>
00000091      320 2914E5BA132025B3      006      6641 There's Gonna Be Som
00000099      320 FAE8D4D8AF11B744      004      6995 Live Wire
00000597      320 20D7CEDE6E323CB0      002      1701 Babe I'm Gonna Leave
00000600      320 11BAC51E6846898C      001      1693 Black Dog
00000605      320 734A4EED8255AC47      007      1367 Tea For One
00001071 *** End of Data ***

```

Figure 74. SELCPYi - SDE ONLY 3.

## Searching for INVALID Data

- The keyword **INVALID** may also be specified to search for fields containing data that is invalid according to its defined data-type. e.g. X'ABCD' in a **packed-decimal** field.
- Type the following commands to produce the results displayed below.
  - ◆ **SEL #11,#13 H,\***
  - ◆ **HEX ON**
  - ◆ **ONLY INVALID #11,#13**

```

-SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
      SAMPLE-RATE NORMALIZATION PERSISTENT-ID TRACK-NUM TRACK-ID
      #11 #13 #2 #3 #4
      PD 294:3 PD 301:3 AN 1:16 ZD 17:3 ZD 20:4
      <---+> <---+> <---+---1---+> <---> <--->
00000208 ***** 0 BCE177B1DB2B983A 016 1383
      400 000 CCCFFCFCFCFFFC FFC FFFC
      800 00C 2351772142229831 016 1383

00000551 44100 ***** 58CF2C29F7A472F0 003 3147
      410 139 FFCCFCFFCFCFFFC FFC FFFC
      40C 0EC 5836232967147260 003 3147

00000703 ***** 0 67BCBC8407B6204C 018 3441
      410 000 FFCCFCFFCFCFFFC FFC FFFC
      400 00C 6723238407262043 018 3441

00000769 44100 ***** 43444409245FB890 003 4069
      410 076 FFFFFFFFCCFF FFC FFFC
      40C A0C 4344440924562890 003 4069

00000966 ***** 0 99D68F50F8BC243F 023 3821
      410 000 FFCFFCFCFCFFFC FFC FFFC
      400 00C 9946865068232436 023 3821

00001007 44100 4923 43EED60467C11B25 003 4479
      410 093 FFCCFCFFCFCFF FFC FFFC
      40C 42C 4355460467311225 003 4479
Se Line=208 Col=1 Alt=0,0;0 Size=1070 Recl=407 Fmt=F Files=1 Vi

```

Figure 75. SELCOPYi - SDE ONLY 4.

## Using CHANGE commands

- Type the following commands to produce the results displayed below.
  - ◆ **SEL TRACK-NUM,NAME HOLD,ALBUM,ARTIST,\***
  - ◆ **;Change '#38;' '&'**
- Note:** Semi-colon (;) is the default command-separator character. In order to use the separator character as a legitimate part of a command string we must suspend its normal handling. This can be done by either
  - Updating the separator character in the Settings panel, issuing the command, then resetting the separator character. This is cumbersome and upsetting!
  - As in the above example, let **SELCOPYi** automatically suspend separator handling for the duration of a single command, simply by prefixing that command with semi-colon (i.e. the prevailing separator character).
- Press **F5** (RFIND) to search for the next occurrence.
- Press **F6** (RCHANGE) to change it.
- Or add the **ALL** parameter to the CHANGE command to change all occurrences.
- Type **Help Change** for full information.

```

SELCOPY/i - Edit USER123.SELCTR.N.ZZST1DAT using USER123.SELCTR.N.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Record type: TRACK Fixed(407) Offset=0 Data elements=18
TRACK-NUM NAME ALBUM ARTIST
#3 #5 #7 #6
ZD 17:3 AN 24:120 AN 214:70 AN 144:70
<--> <---+---1---+---> <---+---1---+---> <---+---1---+--->
00000001 001 Rolling In the Deep 21 Adele
00000002 002 Rumour Has It 21 Adele
00000003 003 Turning Tables 21 Adele
00000004 004 Don't You Remember 21 Adele
00000005 005 Set Fire to the Rain 21 Adele
00000006 006 He Won't Go 21 Adele
00000007 007 Take It All 21 Adele
00000008 008 I'll Be Waiting 21 Adele
00000009 009 One and Only 21 Adele
00000010 010 Lovesong 21 Adele
00000011 011 Someone Like You 21 Adele
00000012 012 I Found a Boy (Bonus 21 Adele
00000013 013 Adele 21 - A Track B 21 Adele
==CHG> 001 Hold On Boys & Girls Alabama Shakes
==CHG> 002 I Found You Boys & Girls Alabama Shakes
==CHG> 003 Hang Loose Boys & Girls Alabama Shakes
==CHG> 004 Rise to the Sun Boys & Girls Alabama Shakes
00000018 005 You Ain't Alone Boys & Girls Alabama Shakes
00000019 006 Goin' to the Party Boys & Girls Alabama Shakes
00000020 007 Heartbreaker Boys & Girls Alabama Shakes
00000021 008 Boys & Girls Boys & Girls Alabama Shakes
00000022 009 Be Mine Boys & Girls Alabama Shakes
00000023 010 I Ain't the Same Boys & Girls Alabama Shakes
Se | Line=1 | Col=1 | Alt=4,4;4 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View
  
```

Figure 76. SELCOPYi - SDE CHANGE 1.

## UNDO / REDO

Note that all modifications may be individually undone/redone using **F22** / **F23** (normally Shift-F10 / F11) which are set to execute the **UNDO/REDO** primary commands.

- Consecutive modifications may be undone by pressing **F22** repeatedly.
- Consecutive modifications may be redone by pressing **F23** repeatedly.
- The **UNDOING** primary command controls the following aspects:
  - Whether the UNDO/REDO facility is activated.
  - The number of modification levels maintained.
  - The maximum amount of storage allocated.
- Type **Query UNDOING** to determine your current settings.
- Type **Help UNDOING** for full information.

## Selecting only records affected by CHANGE

After applying the above **CHANGE** to all records, you may wish to display only the changed records. To do this type

- **ALL Changed**
- Type **Help ALL** for full information.

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
ZZSD178I 158 lines of record type TRACK selected by all c.
      TRACK-NUM NAME                ALBUM                ARTIST
      #3 #5                #7                #6
      ZD 17:3 AN 24:120      AN 214:70      AN 144:70
      <--> <---+---1-----+---> <---+---1-----+---> <---+---1-----+--->
==CHG>      001 Hold On                Boys & Girls          Alabama Shakes
==CHG>      002 I Found You            Boys & Girls          Alabama Shakes
==CHG>      003 Hang Loose             Boys & Girls          Alabama Shakes
==CHG>      004 Rise to the Sun        Boys & Girls          Alabama Shakes
==CHG>      005 You Ain't Alone       Boys & Girls          Alabama Shakes
==CHG>      006 Goin' to the Party     Boys & Girls          Alabama Shakes
==CHG>      007 Heartbreaker           Boys & Girls          Alabama Shakes
==CHG>      008 Boys & Girls           Boys & Girls          Alabama Shakes
==CHG>      009 Be Mine               Boys & Girls          Alabama Shakes
==CHG>      010 I Ain't the Same       Boys & Girls          Alabama Shakes
==CHG>      011 On Your Way           Boys & Girls          Alabama Shakes
==CHG>      012 Heavy Chevy           Boys & Girls          Alabama Shakes
==CHG>      013 Rainy Day Women #12    The Essential Bob Dy Bob Dylan
==CHG>      013 The Rising             Bruce Springsteen & Bruce Springsteen
==CHG>      001 Devils & Dust          Devils & Dust         Bruce Springsteen
==CHG>      005 Black Cowboys          Devils & Dust         Bruce Springsteen
==CHG>      001 Long Time Comin'      Live In Dublin       Bruce Springsteen
==CHG>      001 Atlantic City         Live In Dublin       Bruce Springsteen
==CHG>      002 Old Dan Tucker        Live In Dublin       Bruce Springsteen
==CHG>      002 Open All Night        Live In Dublin       Bruce Springsteen
==CHG>      003 Pay Me My Money Down  Live In Dublin       Bruce Springsteen
==CHG>      003 Eyes On the Prize     Live In Dublin       Bruce Springsteen
==CHG>      004 Growin' Up            Live In Dublin       Bruce Springsteen
Se | Line=14 | Col=1 | Alt=5,5;5 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vie

```

Figure 77. SELCPYi - SDE ALL CHANGED.

## Restricting the CHANGE to Specific Fields

Just like FIND, EXCLUDE and ONLY, the **CHANGE** command may be restricted to one or more specific fields. e.g.

- C ALL '21' 'Twenty-One' (NAME)

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> c all '21' 'Twenty-One' (Name) Scroll> Csr
00000000 *** Top of Data ***
Record type: TRACK Fixed(407) Offset=0 Data elements=18
      TRACK-NUM  NAME                      ALBUM                      ARTIST
      #3        #5                      #7                      #6
      ZD 17:3   AN 24:120                AN 214:70              AN 144:70
      <--> <---+---1---+---> <---+---1---+---> <---+---1---+--->
00000001      001 Rolling In the Deep      21                      Adele
00000002      002 Rumour Has It           21                      Adele
00000003      003 Turning Tables          21                      Adele
00000004      004 Don't You Remember      21                      Adele
00000005      005 Set Fire to the Rain    21                      Adele
00000006      006 He Won't Go            21                      Adele
00000007      007 Take It All             21                      Adele
00000008      008 I'll Be Waiting         21                      Adele
00000009      009 One and Only            21                      Adele
00000010      010 Lovesong                21                      Adele
00000011      011 Someone Like You       21                      Adele
00000012      012 I Found a Boy (Bonus   21                      Adele
==CHG>      013 Adele Twenty-One - A      21                      Adele
00000014      001 Hold On                Boys & Girls            Alabama Shakes
00000015      002 I Found You             Boys & Girls            Alabama Shakes
00000016      003 Hang Loose              Boys & Girls            Alabama Shakes
00000017      004 Rise to the Sun         Boys & Girls            Alabama Shakes
00000018      005 You Ain't Alone         Boys & Girls            Alabama Shakes
00000019      006 Goin' to the Party      Boys & Girls            Alabama Shakes
00000020      007 Heartbreaker            Boys & Girls            Alabama Shakes
00000021      008 Boys & Girls            Boys & Girls            Alabama Shakes
00000022      009 Be Mine                Boys & Girls            Alabama Shakes
Se | Line=0 | Col=1 | Alt=6,6;6 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 78. SELCPYi - SDE CHANGE 2.



## CHANGEing Numeric Data-Type Fields

Next we'll demonstrate **CHANGE** of a numeric data-type field, using a relational operator.

Type the following command to change all values greater than or equal to 10, in the TRACK-NUM field only, to 999.

• C ALL GE 10 999 #3

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
ZZSD212I 310 (out of 310) occurrences were changed in 310 (out of 1070)
records of type TRACK.
TRACK-NUM NAME ALBUM ARTIST
#3 #5 #7 #6
ZD 17:3 AN 24:120 AN 214:70 AN 144:70
<--> <--+---1-----> <--+---1-----> <--+---1----->
00000001 001 Rolling In the Deep 21 Adele
00000002 002 Rumour Has It 21 Adele
00000003 003 Turning Tables 21 Adele
00000004 004 Don't You Remember 21 Adele
00000005 005 Set Fire to the Rain 21 Adele
00000006 006 He Won't Go 21 Adele
00000007 007 Take It All 21 Adele
00000008 008 I'll Be Waiting 21 Adele
00000009 009 One and Only 21 Adele
==CHG> 999 Lovesong 21 Adele
==CHG> 999 Someone Like You 21 Adele
==CHG> 999 I Found a Boy (Bonus 21 Adele
==CHG> 999 Adele Twenty-One - A 21 Adele
00000014 001 Hold On Boys & Girls Alabama Shakes
00000015 002 I Found You Boys & Girls Alabama Shakes
00000016 003 Hang Loose Boys & Girls Alabama Shakes
00000017 004 Rise to the Sun Boys & Girls Alabama Shakes
00000018 005 You Ain't Alone Boys & Girls Alabama Shakes
00000019 006 Goin' to the Party Boys & Girls Alabama Shakes
00000020 007 Heartbreaker Boys & Girls Alabama Shakes
00000021 008 Boys & Girls Boys & Girls Alabama Shakes
00000022 009 Be Mine Boys & Girls Alabama Shakes
Se | Line=0 | Col=1 | Alt=7,7;7 | Size=1070 | Recl=407 | Fmt=F | Files=1 | View

```

Figure 79. SELCPYi - SDE CHANGE 3.

## Filtering records using ALL(WHERE)/MORE/LESS commands

As an alternative to using the ONLY, FIND and EXCLUDE commands, records may be 'filtered' by a (potentially complex) **SQL-style expression** using the **ALL**, **MORE** and **LESS** commands.

- **ALL** excludes all records except those that match the selection criteria.
- **MORE** re-includes any currently excluded records that match the selection criteria.
- **LESS** excludes any included records that match the selection criteria.
- **Where** is a synonym for **ALL**.

Type the following commands to produce the results below.

- **SELECT #10,#3,#5 H,#7,#6,\***
- **ALL BIT-RATE > 300**

```
SELCOPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST10)
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> all bit-rate > 300
Record type: TRACK Fixed(407) Offset=0 Data elements=18
BIT-RATE TRACK-NUM NAME ALBUM ARTIST
#10 #3 #5 #7 #6
FB 292:2 ZD 17:3 AN 24:120 AN 214:70 AN 144:70
<----+> <--> <---+-----1-----+----> <---+-----1-----+----> <---+-----1-----+---->
00000091 320 006 There's Gonna Be Som Dirty Deeds Done Dir AC/DC
00000099 320 004 Live Wire High Voltage AC/DC
00000597 320 002 Babe I'm Gonna Leave Led Zeppelin I Led Zeppe
00000600 320 001 Black Dog Led Zeppelin IV Led Zeppe
00000605 320 007 Tea For One Presence Led Zeppe
00001071 *** End of Data ***
Se | Line=91 | Col=1 | Alt=7,7;7 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vie
```

Figure 80. SELCOPY/i - SDE ALL 1.

## Using Multiple Selection Criteria

Selection criteria expressions may specify multiple conditions.

- ALL BIT-RATE > 300 OR #10 < 128

```

SELCPY/i - Edit USER123.SELCTRN.ZZST1DAT using USER123.SELCTRN.SAM1(ZZST1C
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> all bit-rate > 300 or #10 < 128 Scroll> Csr
Record type: TRACK Fixed(407) Offset=0 Data elements=18
BIT-RATE TRACK-NUM NAME ALBUM ARTIST
#10 #3 #5 #7 #6
FB 292:2 ZD 17:3 AN 24:120 AN 214:70 AN 144:70
<---+> <--> <---+---1---+---> <---+---1---+---> <---+---
00000091 320 006 There's Gonna Be Som Dirty Deeds Done Dir AC/DC
00000099 320 004 Live Wire High Voltage AC/DC
00000597 320 002 Babe I'm Gonna Leave Led Zeppelin I Led Zeppe
00000600 320 001 Black Dog Led Zeppelin IV Led Zeppe
00000605 320 007 Tea For One Presence Led Zeppe
00000708 96 004 Wish You Were Here Wish You Were Here Pink Floy
00000795 125 001 You Are the Best Thi Gossip In the Grain Ray LaMon
00000796 125 002 Let It Be Me Gossip In the Grain Ray LaMon
00000797 125 003 Sarah Gossip In the Grain Ray LaMon
00000798 125 004 I Still Care for You Gossip In the Grain Ray LaMon
00000799 125 005 Winter Birds Gossip In the Grain Ray LaMon
00000800 125 006 Meg White Gossip In the Grain Ray LaMon
00000801 125 007 Hey Me, Hey Mama Gossip In the Grain Ray LaMon
00000802 125 008 Henry Nearly Killed Gossip In the Grain Ray LaMon
00000803 125 009 A Falling Through Gossip In the Grain Ray LaMon
==CHG> 125 999 Gossip In the Grain Gossip In the Grain Ray LaMon
00001071 *** End of Data ***

Se | Line=91 | Col=1 | Alt=7,7;7 | Size=1070 | Recl=407 | Fmt=F | Files=1 | Vie

```

Figure 81. SELCPYi - SDE ALL 2.

## Increasing the size of the Command Input Area

Complex expressions may require more space to type than is available on a single command line.

Type **CLN** to show an options dialog that allows you increase the number of command lines visible for the current display window.

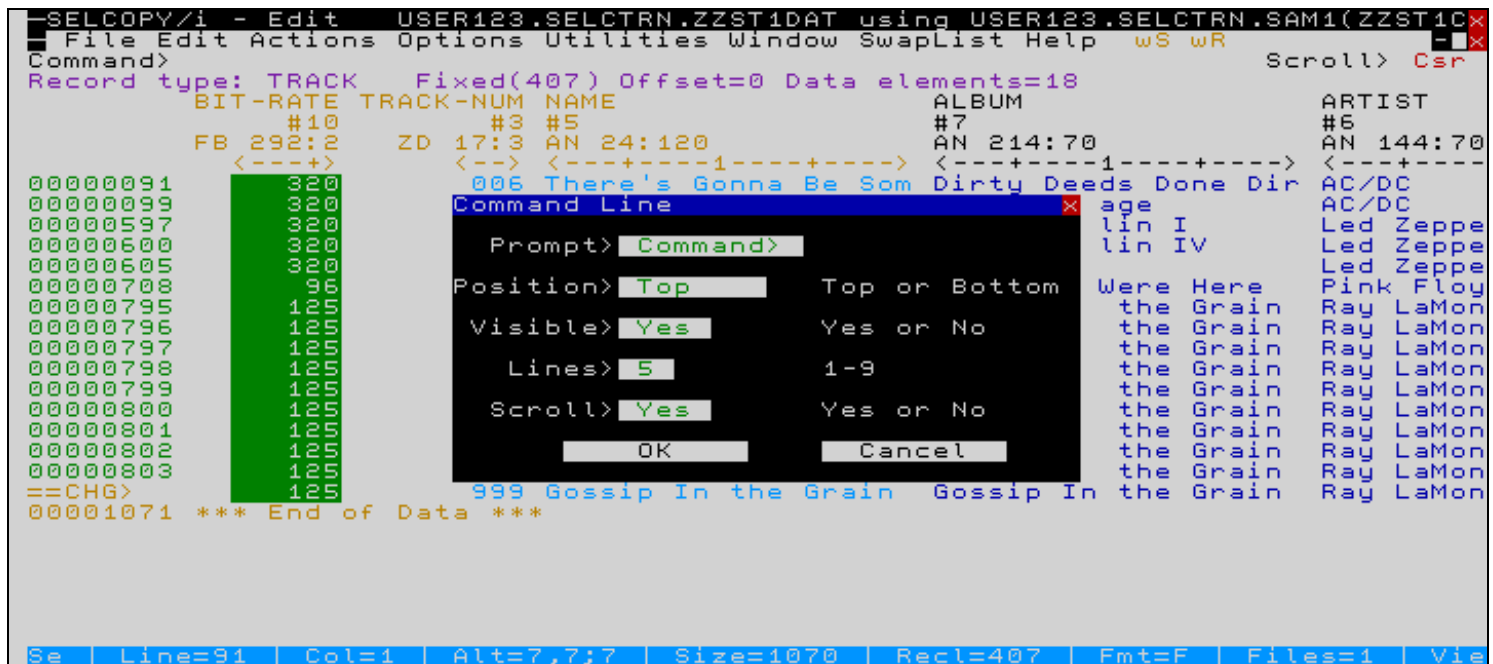


Figure 82. SELCOPYi - SDE Command Line Options.

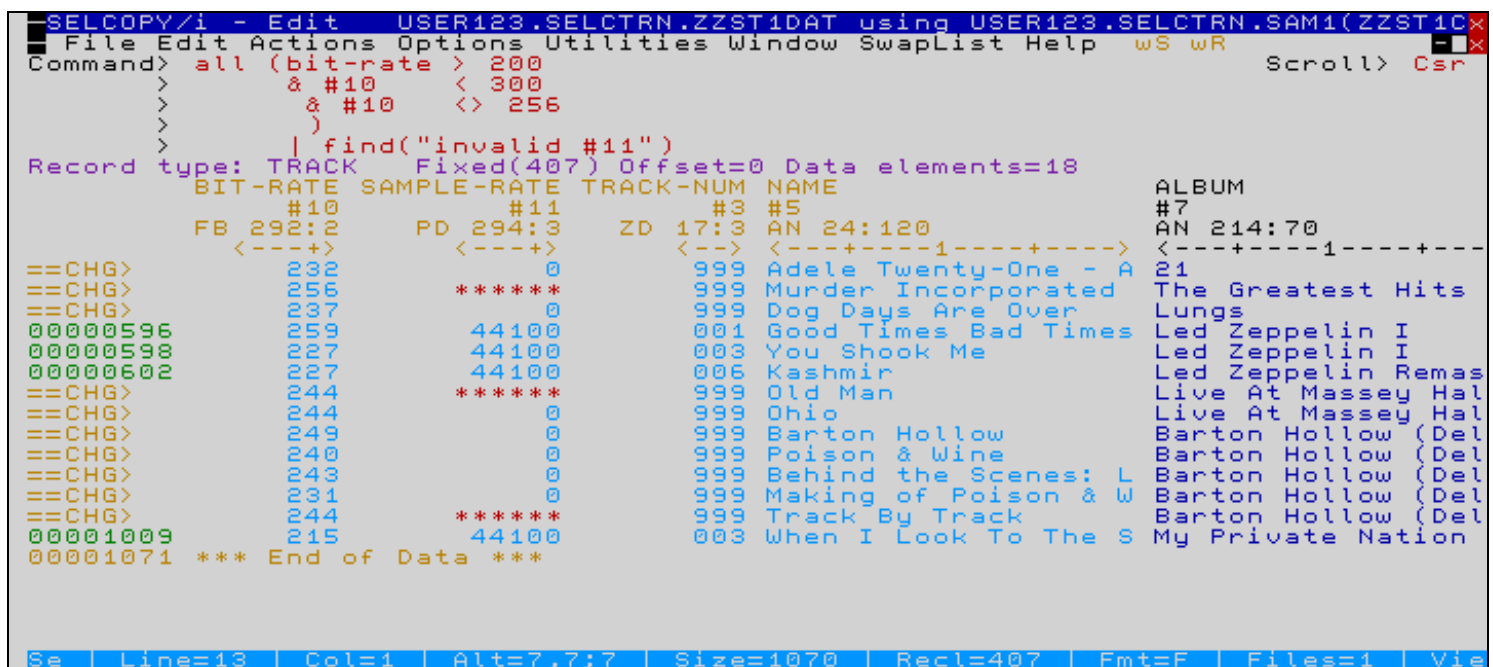


Figure 83. SELCOPYi - SDE ALL 3.

## Using a FILTER to Select Records on Load

You may wish to select records based on specific criteria during initial load of the file into the **SELCOPYi** Structured Data Editor.

For example, to load only the first 20 records that contain a value in **position 348** (the year component of RELEASE-DATE)

- that is **greater than '0000'**
- but **less than '1980'**

Choose the **Quick Filter** feature from the SDE Edit / Browse Entry Panel (=2).

- Activate the *Filter* option by entering a / in the left margin field.
- Enter **Q** to select *Quick* filter.
- Type **FILT** (or press **F6**) to define or modify the filter selection-criteria.

```

SELCOPY/i - Structured Data Browse/Edit
File Command Structure Replace Help
Command>
ZZSGSDE0
PDS/PDSE member, Sequential, VSAM or HFS path:
  Name> USER123.SELCTR.N.ZZST1DAT
  Volume> If dataset is uncataloged.
+ Member>
Action:
  Browse Data.
  Edit Full. (Insert/Update/Delete) - Edit Full Auxiliary. (AUX File)
  Edit In-Place. (Update only) - Edit Full Read-Only. (DISP=SHR)
  - Edit Full Read-Only & Auxiliary.
Structure/Copybook overlay:
  Dsn> USER123.SELCTR.N.SAM1
  Type: - SDO - AData / Cobol - PL1
  Member> ZZST1CPC
Record Selection:
  Start>
  For> @ # records
  Filter> Q Filter selected records. (F=File; Q=Quick) (PF6=Edit Filter)
  File>
Additional Options: - (Enter "/" to display HFS and Profile options.)
  
```

Figure 84. SELCOPYi - SDE Quick Filter 1.

## Specifying Simple FILTER Selection Criteria

- Enter **20** in the *Limit*> field to restrict the number of records selected.
- Enter **I** in the *Type*> field to specify that selected records should be **included** in the load.
- Enter **348** into the *Position* column of table row 1.
- Enter **4** into the *Length* column.
- Enter **>** (greater-than) into the *ROp* (Relational Operator) column.  
Alternatively enter blank to get a list of available operators from which you may make your selection (by placing the cursor and pressing ENTER).
- Enter **'0000'** into the *Value* column.
  - ♦ For simple case-insensitive character strings there is no need to add quotes (this will be done automatically).
  - ♦ You may specify the string using **C'AbCd'** notation if case-sensitivity is required.
  - ♦ Hex strings may be specified using **X'1234'** notation.
- Replicate table entry line 1 by typing **R** into the table prefix area (*000001*).  
The *AND/OR* column on the new line will automatically set to **AND**.
- Enter **<** (less-than) into the *ROp* (Relational Operator) column of inserted table row 2.
- Enter **'1980'** into the *Value* column.

```

SELCOPY/i - Quick Filter - Selection Criteria
File Help                                wS wR  Scroll> Csr
Command>
ZZSGFLTQ
Limit> 20 (0=No limit)  Type> I (I=INCLUDE, X=EXCLUDE) PF1=Help

Quick FILTER - Selection Criteria.                2 Rows
AND Position Length ROp Value                    (Character strings must be quoted)
/ OR
<.> <...+> <...+> <.> <...+>...1...+...2...+...3...+...4...+>
000001 348 4 > '0000'
000002 AND 348 4 < '1980'
000003 *** End of Data ***
  
```

Figure 85. SELCOPYi - SDE Quick Filter 2.

## Activating/Deactivating a FILTER

- Press **F3** to return to the SDE Edit/Browse Entry Panel.
- Press **ENTER** to edit the sample file using the active filter.
- To **activate/deactivate** the filter simply check/uncheck the *Filter* option.
- A **saved filter** may be activated by specifying filter type **F** and entering the saved filter dataset / member name.
- To define a **saved filter** either:
  1. Select the *Filter* option (=10) from the **SELCOPYi** Primary Option Menu.
  2. At the SDE Edit / Browse Entry Panel, specify filter type **F**, enter the saved filter dataset/member name then press **F6** (or type **FILTER**).
- If a structure is active then your filter will define selection criteria referring to the values of named (formatted) fields.
- Formatted selection criteria are individually specified for each defined record-type.

```

SELCOPY/i - Edit(UP) USER123.SELCTR.N.ZZ9T1DAT using USER123.SELCTR.N.SAM1(ZZST
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
00000000 *** Top of Data ***
Record type: TRACK Fixed(407) Offset=0 Data elements=18
RELEASE-DATE          PERSISTENT-ID          TRACK-NUM  TRACK-ID  NAME
#16                   #2                   #3         #4     #5
AN 348:20             AN 1:16             ZD 17:3    ZD 20:4  AN 24:120
<---+---1---+--->  <---+---1---+--->  <--->      <--->  <---+---1---
00000001 1974-02-01T00:00:00Z AD104CAC30071918 001      2841  Burn
00000002 1974-02-01T00:00:00Z E19E07D591BC8755 007      2843  Mistreated
00000003 1974-02-01T00:00:00Z B64042E3A5647B38 011      2845  Mistreated (2
00000004 1976-01-01T00:00:00Z 8827C471776C1CB8 003      3205  Dreamer Decei
00000005 1978-04-01T00:00:00Z 632197A321A2F00F 008      3207  Beyond the Re
00000006 1979-01-01T00:00:00Z 341F3309D106AA63 001      3209  Exciter
00000007 1979-01-01T00:00:00Z 9362F8D807CB9B07 002      3211  Running Wild
00000008 1979-01-01T00:00:00Z 97BE40132BEC0CC5 003      3213  Sinner
00000009 1979-01-01T00:00:00Z 8A60E8F214166BAF 004      3215  The Ripper
00000010 1979-01-01T00:00:00Z 2DFD45B36EEBACB7 005      3217  The Green Man
00000011 1979-01-01T00:00:00Z C820742072BD797C 006      3219  Diamonds and
00000012 1979-01-01T00:00:00Z 709AD86814498F84 007      3221  Victim of Cha
00000013 1979-01-01T00:00:00Z 75A1373877232049 008      3223  Genocide
00000014 1979-01-01T00:00:00Z CB175572940D4828 009      3225  Tyrant
00000015 1979-01-01T00:00:00Z 3B1A38FDD8E68DA4 010      3227  Rock Forever
00000016 1979-01-01T00:00:00Z 9185DB3E305E92F8 011      3229  Delivering th
00000017 1979-01-01T00:00:00Z 5EA55ECF45E8F83C 012      3231  Hell Bent for
00000018 1979-01-01T00:00:00Z AC886839D38851E7 013      3233  Starbreaker
00000019 1970-10-05T07:00:00Z 50151071B945EA89 004      3239  Since I've Be
00000020 1971-11-08T08:00:00Z 89D1B798019008B1 004      3241  Stairway to H
00000021 *** End of Data ***

Se | Line=0 | Col=1 | Alt=0,0;0 | Size=20 | Recl=407 | Fmt=F | Files=1 | Views=

```

Figure 86. SELCOPYi - SDE Quick Filter 3.

## Working with Multiple Record-Types

Files with multiple record-types may be mapped by:

1. Multiple (COBOL or PL1) copybooks.
2. A single copybook with multiple **01-LEVEL** entries, each defining a separate record-type.
3. A **SELCOPYi Structured Data Object (SDO)** which may be generated from one or more copybooks, using the **Structure** option from the Primary Option Menu (=9).

The second sample dataset (userpfx.SELCTRN.ZZST2DAT) contains the same information as the first, but is comprised of three distinct record-types:

1. ARTIST
2. ALBUM
3. TRACK

To reproduce the following screen-shot browse the sample dataset in its raw state, i.e. without applying a copybook / structure overlay.

Use the Data Edit (=2) panel to:

- Specify the *Data File*:
  - ◆ Type **userpfx.SELCTRN.ZZST2DAT** in the *Name* field, where *userpfx* is your own user prefix. If wildcards are specified then a dataset list will be displayed from which you can make a selection.
- Specify the *Action*:
  - ◆ Activate option *Browse Data* by entering a */*.
- Deactivate the *Structure/Copybook overlay*:
  - ◆ Uncheck the option by removing the */*. This option is provided so that you may deactivate or reactivate structure formatting without needing to remove or retype the dataset and member name.
- Press **ENTER** to edit the sample dataset.
- Type **RECLen** to switch on/off the display of record length column, which displays the length of each record in front of the data.

You will notice that:

- Record 1 is **length=71** and contains '1' in position 1 indicating it is an **ARTIST** record.
- Record 2 is **length=71** too, but contains '2' in position 1 indicating it is an **ALBUM** record.
- Records 3 - 15 are **length=268** and contain '3' in position 1 indicating they are **TRACK** records.

```

SELCOPYi - Browse USER123.SELCTRN.ZZST2DAT      268 V SEQ
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
Record type: UnMapped      Variable(0,268) Offset=0 Data elements=1
Length  UnMapped
<---+---1---+---2---+---3---+---4---+---5---+---6---
00000001    71 1Adele
00000002    71 221
00000003   268 3CB12DD714D51828C00A208CRolling In the Deep
00000004   268 32648A25633D1540400B208ERumour Has It
00000005   268 39815923C6D2E683000C208GTurning Tables
00000006   268 37D003FF752074C1800D208IDon't You Remember
00000007   268 3AED739D8574AA4C500E209ASet Fire to the Rain
00000008   268 3E755BCE1CF5CDEA700F209CHe Won't Go
00000009   268 36798C2AB0AFB257100G209ETake It All
00000010   268 3962B35D1647DE75E00H209GI'll Be Waiting
00000011   268 3D8A6C8FDC280217700I209IOne and Only
00000012   268 32502515DEB53501001{210ALovesong
00000013   268 3E374BE6EE7C86B1D01A210CSomeone Like You
00000014   268 3D4EB4EBF4651EF2001B210EI Found a Boy (Bonus Track)
00000015   268 3CEC92B1BA3204A0A01C210GAdele 21 - A Track By Track Interview
00000016    71 1Alabama Shakes
00000017    71 2Boys &#38; Girls
00000018   268 36D4C2C7BA7E0159300A416IHold On
00000019   268 3E241B09CC251C38600B417AI Found You
00000020   268 3E74C16BCB319870C00C417CHang Loose
00000021   268 3214ED5D95B84533C00D417ERise to the Sun
00000022   268 30E421AFCD141D22D00E417GYou Ain't Alone
00000023   268 3FF47FB9E05DE896700F417IGoin' to the Party
00000024   268 35D46C681552440BF00G418AHeartbreaker
00000025   268 3C54FE7792248562400H418CBoys &#38; Girls
Se | Line=1 | Col=1 | Alt=0,0;0 | Size>228 | Recl=268 | Fmt=V | Files=1 | Views
  
```

Figure 87. SELCOPYi - SDE Sample Dataset 2.



## Automatic Record-Type Association (for Direct Copybook Overlay)

Exit unformatted browse of Sample Dataset 2, then re-edit specifying Structure / Copybook overlay using the second sample copybook (ZZST2CPx), which contains **01-LEVEL** entries for each of the 3 record-types.

- Specify the *Structure/Copybook overlay*:
  - ◆ Activate the option by entering a / in the left margin field.
  - ◆ Type **userpfx.SELCTRN.SAM1** in the *Dsn* field, to specify the PDS library containing the supplied COBOL / PL1 copybook. This dataset name should already be in place (same as previous sample).
  - ◆ Type **ZZST2CPC** in the *Member* field (for COBOL installations).  
Type **ZZST2CPP** in the *Member* field (for PL1 installations).
  - ◆ Check the *Type* option for *Cobol* or *PL1* as appropriate. Note that **SELCOPYi** uses its own internal "compiler" to parse COBOL and PL1 copybooks, so you may use whichever sample copybook you please without the need for an available IBM compiler.
- Press **ENTER** to edit the sample dataset.

Unlike some other products, **SELCOPYi** is able to display files with multiple record-types in Formatted Multi-Record (VFMT) Display Mode with all record-types **visible simultaneously**. A set of record-type column headings will be displayed for each new group of one or more consecutive records of the same type.

You will notice that **SELCOPYi** has attempted to automatically assign record-types, by matching each individual record's length to the length (or range of lengths) defined by the copybook for each record-type. Where this process is unable to uniquely identify a record-type, the first matching record-type is assigned.

The initial view of the sample dataset shows that:

- ARTIST** record #1 has automatically been assigned the correct record-type.  
(first match on fixed record length=71).
- ALBUM** record #2 has automatically been assigned the **incorrect** record-type (ARTIST).  
(first match on fixed record length=71).
- TRACK** record #3 has automatically been assigned the correct record-type.  
(unique match on fixed record length=268).

```
SELCOPY/i - Browse USER123.SELCTRN.ZZST2DAT using USER123.SELCTRN.SAM1(ZZST2C
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
00000000      *** Top of Data ***
Record type: ARTIST      Fixed(71) Offset=0 Data elements=3
      Length RT      ARTIST
      #2      #3
      AN 1:1 AN 2:70
      >      <---+---1---+---2---+---3---+---4---+---5---+
00000001      71 1      Adele
00000002      71 2      21

Record type: TRACK      Fixed(268) Offset=0 Data elements=53
      Length RT      PERSISTENT-ID      TRACK-NUM TRACK-ID NAME
      #2      #3      #4      #5 #6
      AN 1:1 AN 2:16      ZD 18:3      ZD 21:4 AN 25:120
      >      <---+---1---+--->      <->      <-> <---+---1---+---2
00000003      268 3      CB12DD714D51828C      001      2083 Rolling In the Deep
00000004      268 3      2648A25633D15404      002      2085 Rumour Has It
00000005      268 3      9815923C6D2E6830      003      2087 Turning Tables
00000006      268 3      7D003FF752074C18      004      2089 Don't You Remember
00000007      268 3      AED739D8574AA4C5      005      2091 Set Fire to the Rain
00000008      268 3      E755BCE1CF5CDEA7      006      2093 He Won't Go
00000009      268 3      6798C2A80AFB2571      007      2095 Take It All
00000010      268 3      962B35D1647DE75E      008      2097 I'll Be Waiting
00000011      268 3      D8A6C8FDC2802177      009      2099 One and Only
00000012      268 3      2502515DEB535010      010      2101 Lovesong
00000013      268 3      E374BE6EE7C86B1D      011      2103 Someone Like You
00000014      268 3      D4EB4EBF4651EF20      012      2105 I Found a Boy (Bonus
00000015      268 3      CEC92B1BA3204A0A      013      2107 Adele 21 - A Track B

Se | Line=0 | Col=1 | Alt=0,0;0 | Size>228 | Recl=268 | Fmt=V | Files=1 | Views
```

Figure 88. SELCOPYi - SDE Automatic Record-Type Id.

## Record-Identification Criteria (for Direct Copybook Overlay)

When it isn't possible to automatically infer the correct record-type association from the record-length alone, then record-identification criteria must be explicitly specified.

As formatting is provided directly by our sample COBOL or PL1 copybook, then in order to specify record-identification we must use **either** of the following methods.

- Press **F16 (Shift-F4)** to display the **Utilities Menu** then:
  1. Select option **6 - Modify record-type Identification criteria.**
  2. In the **Use When** column for the ALBUM table entry, type any of following equally valid expressions:
    - ◊ **RT='2'**
    - ◊ **substr(record,1,1)='2'**
    - ◊ **left(record,1)='2'**
  3. Press **ENTER** to register the update..
  4. Press **F3** repeatedly to return to the browse/edit view..
- Type any of the following primary commands:
  1. **USE ALBUM WHEN RT='2'**
  2. **USE ALBUM WHEN SUBSTR(RECORD,1,1)='2'**
  3. **USE ALBUM WHEN LEFT(RECORD,1)='2'**

```

--SELCOPY/i - Browse USER123.SELCTRN.ZZST2DAT using USER123.SELCTRN.SAM1(ZZST2C
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Record type: ARTIST      Fixed(71) Offset=0 Data elements=3
Length RT      ARTIST
#2      #3
AN 1:1 AN 2:70
>      <---+---1---+---2---+---3---+---4---+---5---+
00000001 71 1      Adele

Record type: ALBUM      Fixed(71) Offset=0 Data elements=3
Length RT      ALBUM
#2      #3
AN 1:1 AN 2:70
>      <---+---1---+---2---+---3---+---4---+---5---+
00000002 71 2      21

Record type: TRACK      Fixed(268) Offset=0 Data elements=53
Length RT      PERSISTENT-ID TRACK-NUM TRACK-ID NAME
#2      #3      #4      #5 #6

--SDEUTUS - CBL Structured Browse/Edit Utilities menu
Modify record-type identification criteria

Record      Use      Use      Use
Type      Always Never When
ARTIST
ALBUM
TRACK

```

Figure 89. SELCOPYi - SDE Explicit Record-Identification.

Record-Identification criteria defined for direct copybook overlay will persist throughout the **SELCOPYi** session, but will need to be reestablished beyond that.

A **SELCOPYi Structured Data Object (SDO)** permanently consolidates the information defined by one or more copybooks, potentially defining multiple record-types, along with the Record-Identification criteria for each.

An SDO is stored in a dataset (typically a library member), and provides significant performance improvement over direct copybook overlay for all **SELCOPYi** Structured Data components that are capable of record formatting e.g. Browse / Edit, File-Search, File-Reformat, File-Compare.

## Locating NEXT/PREV record by Record-Type

---

- In both formatted multiple-record (VFMT) and formatted single-record (FMT / MAP) display modes, the **NEXT (N)** and **PREV (P)** primary commands may be used to navigate to records, based on their record-type.
  - Type **NEXT ARTIST** to scroll to the next record of the type ARTIST.
  - Type **N /** to scroll to the next record of the same type as the focus record.
  - Type **N ?** to scroll to the next record of a different type from focus record.
  - Type **Help NEXT** for full information.
- It's often handy to set a **PF key** temporarily for the browse/edit session.

e.g. to temporarily set **F5 / F6** to jump to the previous/next ARTIST record, type the following primary commands.

- **PF 5 PREV ARTIST**
- **PF 6 NEXT ARTIST**

## Selecting Visible Record-Types

Since **SELCOPYi** is capable of displaying multiple record-types simultaneously in Formatted Multi-Record (VFMT) Display Mode, it is handy to be able to select precisely which record-types are visible at any given time.

Records of any unselected record-type are represented by "shadow" lines (just like excluded records). This feature is controlled by the **SHADOW** primary command.

Record-types may be selected / deselected using either:

1. The **VIEW (V/V+/V-)** primary command. e.g.
  - ◆ To select only **TRACK** records type:
    - ◇ **V TRACK**
  - ◆ To reselect **all** record-types type:
    - ◇ **V \***
  - ◆ To select only **ARTIST** and **ALBUM** records type:
    - ◇ **V ARTIST,ALBUM**
  - ◆ To deselect **ARTIST** and **ALBUM** records type:
    - ◇ **V- ARTIST,ALBUM**
  - ◆ To additionally select **ALBUM** and **TRACK** records type:
    - ◇ **V+ ALBUM,TRACK**
2. The **V, V+ or V-** line-commands (typed into the prefix area) .
  - ◆ Use **V** to select only records of the focus record-type.
  - ◆ Use **V+** to additionally select records of the focus (shadow line) record-type.
  - ◆ Use **V-** to deselect records of the focus record-type.

```
SELCOPYi - Browse USER123.SELCTRN.ZZST2DAT using USER123.SELCTRN.SDO(ZZST2)
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Record type: ARTIST Fixed(71) Offset=0 Data elements=3
Length RT ARTIST
#2 #3
AN 1:1 AN 2:70
> <--+---1---+---2---+---3---+---4---+---5---+
00000001 71 1 Adele
V+ ----- 1 line(s) suppressed: record type ALBUM -----
00000003 ----- 13 line(s) suppressed: record type TRACK -----
00000016 71 1 Alabama Shakes
00000017 ----- 1 line(s) suppressed: record type ALBUM -----
00000018 ----- 12 line(s) suppressed: record type TRACK -----
00000030 71 1 Alabama 3
00000031 ----- 1 line(s) suppressed: record type ALBUM -----
00000032 ----- 12 line(s) suppressed: record type TRACK -----
00000044 71 1 Alanis Morissette
00000045 ----- 1 line(s) suppressed: record type ALBUM -----
00000046 ----- 1 line(s) suppressed: record type TRACK -----
00000047 ----- 1 line(s) suppressed: record type ALBUM -----
00000048 ----- 13 line(s) suppressed: record type TRACK -----
00000061 71 1 Alex Harvey
00000062 ----- 1 line(s) suppressed: record type ALBUM -----
00000063 ----- 9 line(s) suppressed: record type TRACK -----
00000072 71 1 AC/DC
00000073 ----- 1 line(s) suppressed: record type ALBUM -----
00000074 ----- 10 line(s) suppressed: record type TRACK -----
00000084 ----- 1 line(s) suppressed: record type ALBUM -----
00000085 ----- 15 line(s) suppressed: record type TRACK -----
00000100 ----- 1 line(s) suppressed: record type ALBUM -----
Se | Line=1 | Col=1 | Alt=0,0;0 | Size>228 | Recl=268 | Fmt=V | Files=1 | Views
```

Figure 90. SELCOPYi - SDE Select Visible Record-Types.

**Note:** In Formatted (VFMT/MAP) Display Modes, some primary commands are record-type specific, meaning they act on records of one type only and are sensitive to the **focus record-type** i.e. the record-type of the record at the cursor (or at the top of screen if the cursor is on the command line).

For example, the following commands are **record-type sensitive**:

- FIND, CHANGE, EXCLUDE and ONLY
- LOCATE, ALL(WHERE), MORE and LESS

To avoid ambiguity when issuing any of these commands you may wish to either:

1. Select a single record-type using the **VIEW** command.
2. Temporarily suspend record-type formatting using the **CHAR** command.

## Creating a Structured Data Object (SDO)

An **SDO** may be generated from **COBOL** or **PL1** copybooks using any of the following methods:

- Select option **9 - Structure** from the **SELCOPYi** Primary Option Menu, then select option **1 - Copybook**.
- At any primary command prompt type **=9.1**.
- At any primary command prompt type **SDO**.

The following example will use the panel to generate an SDO from the **ZZST2CPC** (sample #2) COBOL copybook, containing three record-types along with their respective record-identification criteria.

- Specify the *Structure File to Create*:
  - ♦ Type **userpfx.SELCTRN.SDO** in the *Dsn* field, where *userpfx* is your own user prefix.
  - ♦ Type **ZZST2** in the *Member* field.
- Optionally Specify a *Title*:
  - ♦ Activate the option by entering a / in the left margin field.
  - ♦ Type a short (up to 30 characters) title e.g.  
**SELCOPYi Training - Sample 2**
- Optionally Specify a *Description*:
  - ♦ Activate the option by entering a / in the left margin field.
  - ♦ Type a longer (up to 124 characters) description e.g.  
**Training Material: Sample Record Collection Structure  
Multiple Record-Types (ARTIST,ALBUM,TRACK)**

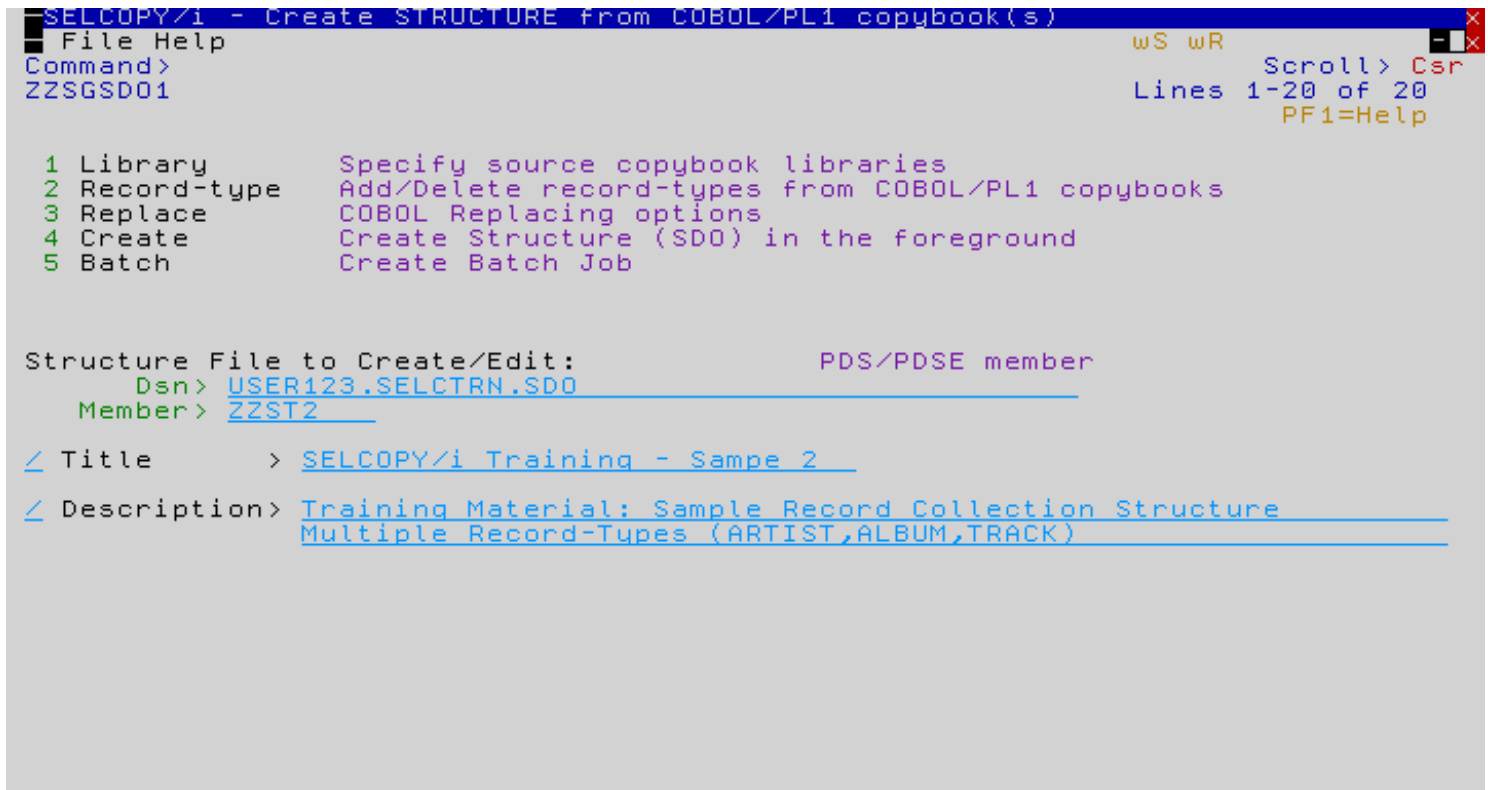


Figure 91. SELCOPYi - SDE Main Panel 1.

## Specifying Copybook Libraries

Select option 1 to specify the dataset name(s) of the libraries containing your COBOL / PL1 copybooks using an editable table.

- Insert a new line into the Copybook Library table by typing **I** into the table prefix area (000001).
- Type **userpfx.SELCTRN.SAM1** into inserted table row 1.
- Press **F3** to return to the SDO main panel.

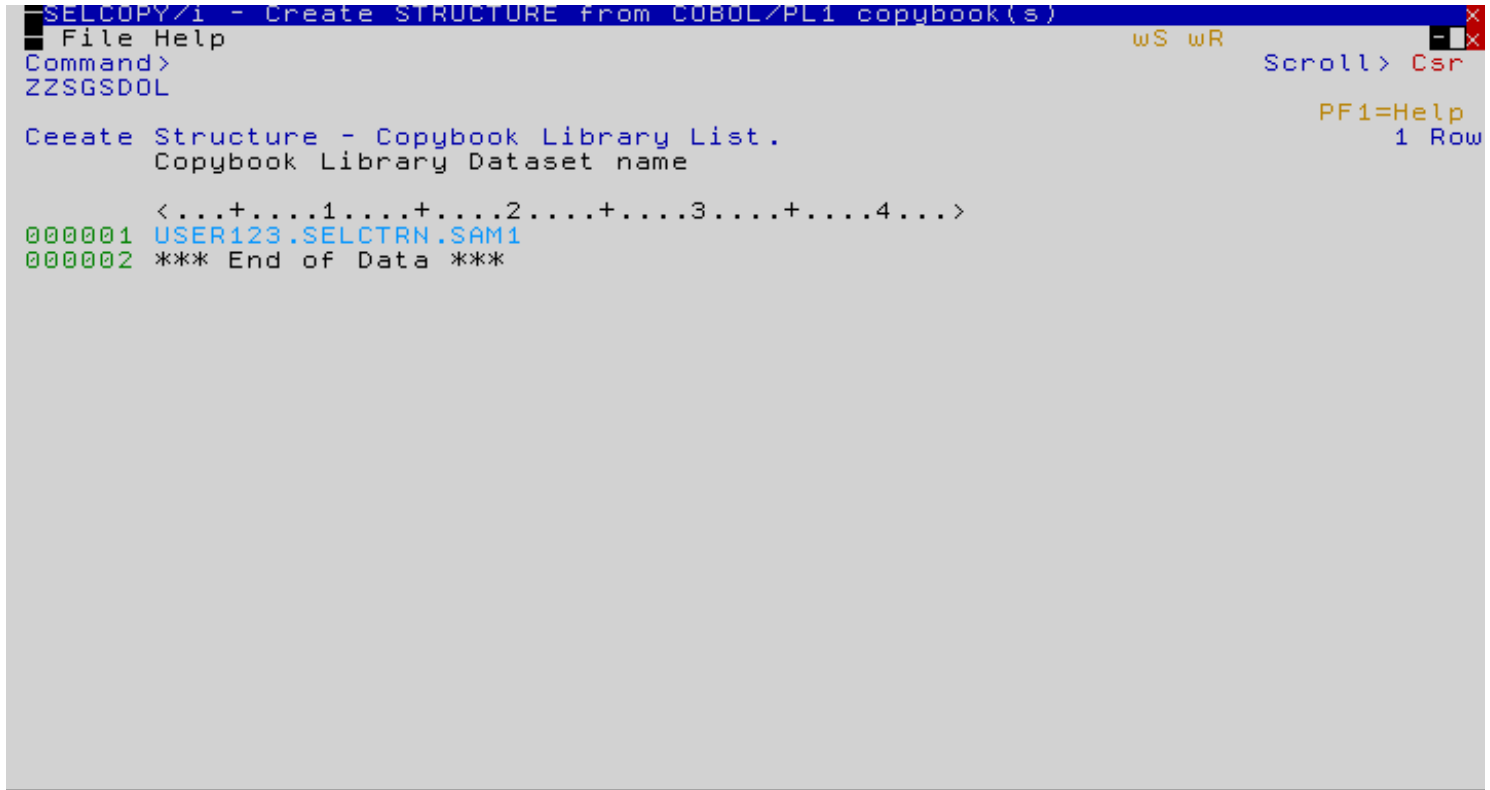


Figure 92. SELCOPYi - SDE Copybook Libraries Panel.

## Specifying Record-Type Details

Select option 2 to specify the source (copybook member name), identification criteria and other optional details for each **record-type**.

- Define the **ARTIST** record-type as follows:
  1. Insert a new line into the table by typing **I** into the table prefix area (000001).
  2. Type **ZZST2CPC** (for COBOL) or **ZZST2CPP** (for PL1) into the *Copybook Library Member* field of inserted table row 1.
  3. The *Type* field will automatically be set to **PRI** indicating a **primary** record-type (requiring explicit record-type identification criteria). This default is already correct.  
Press **F1** with cursor in this field for additional help information.
  4. The *Start Level* field will automatically be set to **1** indicating the record-type is defined at **LEVEL 01**.  
This default is also already correct.  
Press **F1** with cursor in this field for additional help information.
  5. Type **ARTIST** into the *Record-Type Name* field of inserted table row 1.
  6. The *Record Offset* field will automatically be set to **0** indicating the layout describes data from the beginning of the record. Again, this default is also already correct.  
Press **F1** with cursor in this field for additional help information.
  7. The *Lang* field will automatically be set to **COBOL**. Update this to **PL1** if necessary.

```

SELCOPYi - Create STRUCTURE from COBOL/PL1 copybook(s)
File Help                                     wS wR
Command>                                     Scroll> Csr
ZZSGSDOR
Add a table row then press PF2 to specify its record identification-criteria
Create Structure - Define Record-Types.
Copybook Type Start  Record-Type Name (01-Lev)      Record Lang
Library      Level   Offset
Member
000001  ZZST2CPC  PRI      1  ARTIST                      0  COBOL
000002  *** End of Data ***
  
```

Figure 93. SELCOPYi - SDE Define Record-Types 1.

## Specifying Record-Type Identification Criteria

- Define the **identification criteria** for the **ARTIST** record-type as follows:
  - With the cursor anywhere on inserted table row 1, press **F6** (ZOOM) to access a screen where details may be added / updated using a form.
  - In the **Id** field, type any of following equally valid expressions:
    - ◊ **RT='1'**
    - ◊ **substr(record,1,1)='1'**
    - ◊ **left(record,1)='1'**
 Longer expressions may be entered via a text-edit window by pressing **F14** (EXPAND).
  - Press **F3** to return to the record-types definition table.

SELCOPY/1 - Create STRUCTURE: Define record-type

File Help wS wR Scroll> Csr

Command> ZZSGSDOR Lines 1-18 of 18

Member	>	<u>ZZST2CPC</u>	Copybook Member Name
Level	>	<u>1</u>	Starting Level Number (e.g. 01,05)
Name	>	<u>ARTIST</u>	+ Record-Type Name Normally defined by 01-Level Name
Type	>	<u>PRI</u>	Default, Primary or Secondary
Language	>	<u>COBOL</u>	Compiler Language
Offset	>	<u>0</u>	Offset within record at which to start mapping
Id	>	<u>RT='1'</u>	+ Use PF2 to expand Record identification criteria

Press PF3 to return to the record-types list table.

Figure 94. SELCOPY/1 - SDE Define Record-Type Identification Criteria.



## Specifying Additional Record-Types

- Define the **ALBUM** record-type as follows:
  1. Replicate table entry line 1 by typing **R** into the table prefix area (000001).
  2. The *Copybook Library Member* field will already be correct as all of our sample record-types are defined by the same copybook.
  3. The *Type* field will already be correct.
  4. The *Start Level* field will already be correct.
  5. Type **ALBUM** into the *Record-Type Name* field of table row 2.
  6. The *Record Offset* field will already be correct.
  7. The *Lang* field will already be correct.
  8. Press **F6** (ZOOM) to access the form screen.
  9. In the **Id** field, type any of following equally valid expressions:
    - ◊ **RT='2'**
    - ◊ **substr(record,1,1)='2'**
    - ◊ **left(record,1)='2'**
  10. Press **F3** to return to the record-types definition table panel.
- Define the **TRACK** record-type as follows:
  1. Replicate table entry line 2 by typing **R** into the table prefix area (000002).
  2. Type **TRACK** into the *Record-Type Name* field of table row 3.
  3. Press **F6** (ZOOM) to access the form screen.
  4. In the **Id** field, type any of following equally valid expressions:
    - ◊ **RT='3'**
    - ◊ **substr(record,1,1)='3'**
    - ◊ **left(record,1)='3'**

```

SELCOPY/1 - Create STRUCTURE from COBOL/PL1 copybook(s)
File Help
Command>
ZZSGSDOR
Add a table row then press PF2 to specify its record identification-criteria
Create Structure - Define Record-Types.
Copybook Type Start Record-Type Name (01-Lev) Record Lang
Library Level Offset
Member
000001 <...+...> <...> <...> <...+...1...+...2...+...3...+...> <...+> <...>
000002 ZZST2CPC PRI 1 ARTIST 0 COBOL
000003 ZZST2CPC PRI 1 ALBUM 0 COBOL
000004 ZZST2CPC PRI 1 TRACK 0 COBOL
000004 *** End of Data ***
  
```

Figure 95. SELCOPYi - SDO Define Record-Types 2.

## Generating the SDO

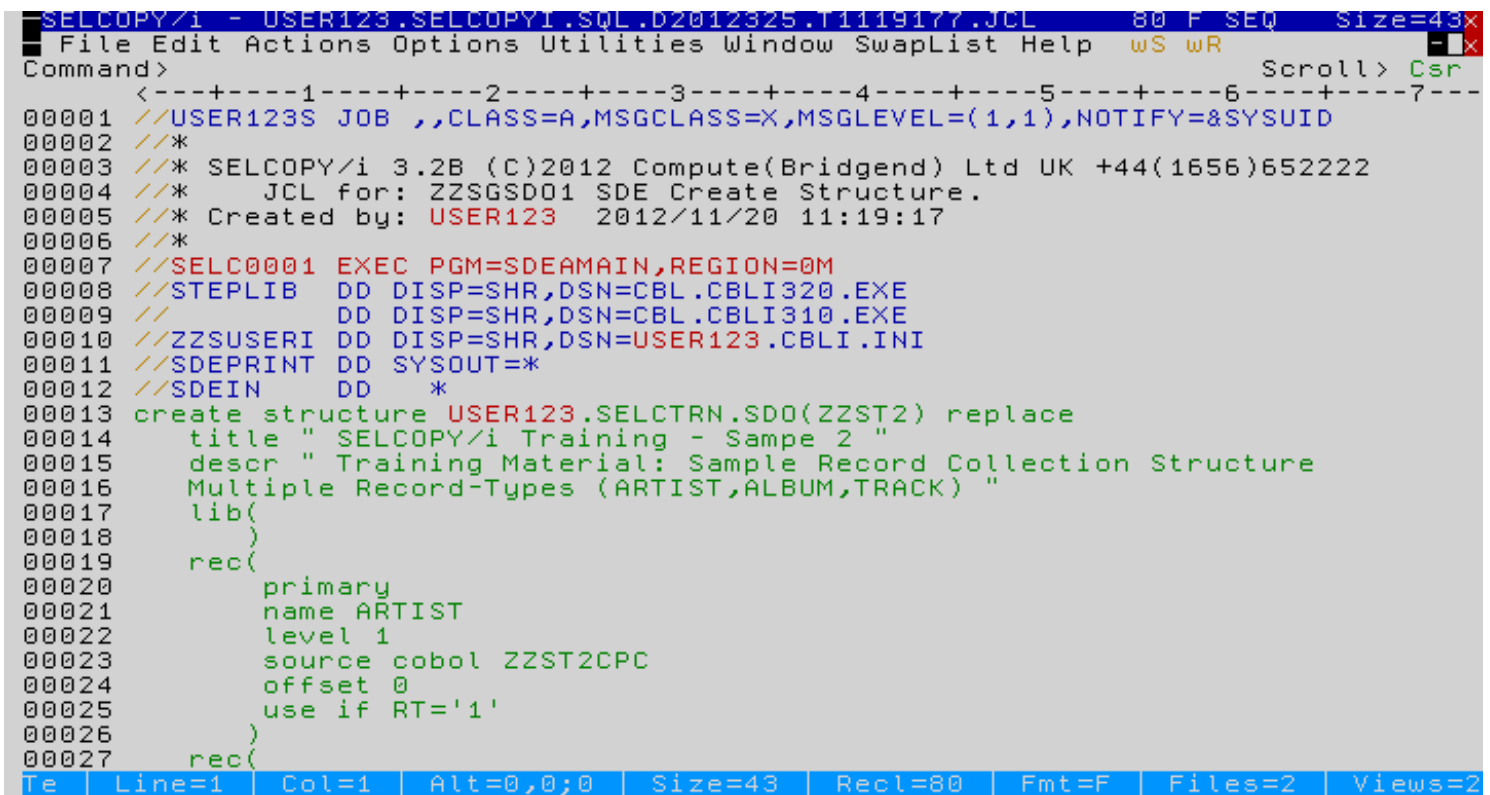
- Press **F3** to return to the record-types definition table panel.
- Press **F3** again to return to SDO main panel.
- Select option **3** should you wish to supply any **COBOL Replacing Options** (not necessary for our sample).
- Select either:
  - ♦ Option **4** to **Create the SDO in the foreground**.
  - ♦ Option **5** to **Create a Batch Job** to generate the SDO.

**Note:** To specify a **//JOB** statement that will be automatically inserted at the start of any z/OS batch job generated using **SELCOPYi**, select option **6 Batch** from the **Settings** panel (=0.6).

- If created in the foreground, a message similar to the following should appear on completion:

```
ZZSD145I Structure USER123.SELCTRN.SDO(ZZST2) created with 3 record type(s).
Maximum record length 268, minimum record length 71.
```

- Generated batch job displayed below.



```
SELCOPY/i - USER123.SELCOPY1.SDL.D2012325.T1119177.JCL      80 F SEQ      Size=43x
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
00001 //USER123S JOB , ,CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
00002 //*
00003 //* SELCOPY/i 3.2B (C)2012 Compute(Bridgend) Ltd UK +44(1656)652222
00004 //*      JCL for: ZZSGSD01 SDE Create Structure.
00005 //* Created by: USER123   2012/11/20 11:19:17
00006 //*
00007 //SELC0001 EXEC PGM=SDEAMAIN,REGION=0M
00008 //STEPLIB DD DISP=SHR,DSN=CBL.CBLI320.EXE
00009 // DD DISP=SHR,DSN=CBL.CBLI310.EXE
00010 //ZZSUSERI DD DISP=SHR,DSN=USER123.CBLI.INI
00011 //SDEPRINT DD SYSOUT=*
00012 //SDEIN DD *
00013 create structure USER123.SELCTRN.SDO(ZZST2) replace
00014 title " SELCOPY/i Training - Sampe 2 "
00015 descr " Training Material: Sample Record Collection Structure
00016 Multiple Record-Types (ARTIST,ALBUM,TRACK) "
00017 lib(
00018 )
00019 rec(
00020 primary
00021 name ARTIST
00022 level 1
00023 source cobol ZZST2CPC
00024 offset 0
00025 use if RT='1'
00026 )
00027 rec(
Te | Line=1 | Col=1 | Alt=0,0;0 | Size=43 | Recl=80 | Fmt=F | Files=2 | Views=2
```

Figure 96. SELCOPYi - SDO Generated Batch Job.

## Browse/Edit using a generated SDO

- Display the **Data-Edit** panel by typing **SDE**.
- Specify the *Data File*:
  - ◆ Type **userpfx.SELCTRN.ZZST2DAT** in the *Name* field, where *userpfx* is your own user prefix.
- Specify the *Structure/Copybook overlay*:
  - ◆ Activate the option by entering a **/** in the left margin field.
  - ◆ Type **userpfx.SELCTRN.SDO** in the *Dsn* field, to specify the PDS library containing the generated Structured Data Object (SDO).
  - ◆ Type **ZZST2** in the *Member* field.
  - ◆ Check the *Type* option for **SDO**. This is actually optional as SELCOPYi will always check to see if the file specified is an SDO before attempting to parse it as COBOL or PL1.
- Press **ENTER** to edit the sample dataset.

```

SELCOPY/1 - Structured Data Browse/Edit
File Command Structure Replace Help          wS wR
Command>                                     Scroll> Csr
ZZSGSDE0                                     Lines 1-21 of 21
PDS/PDSE member, Sequential, VSAM or HFS path:
  Name> USER123.SELCTRN.ZZST2DAT             + Member>
  Volume>                                     If dataset is uncataloged.

Action:
  / Browse Data.                               - Edit Full Auxiliary. (AUX File)
  - Edit Full. (Insert/Update/Delete)          - Edit Full Read-Only. (DISP=SHR)
  - Edit In-Place. (Update only)                - Edit Full Read-Only & Auxiliary.

Structure/Copybook overlay:
  / Dsn> USER123.SELCTRN.SDO                 Member> ZZST2
  Type: / SDO      - AData  - Cobol  - PL1

Record Selection:
  - Start>                                     + / Record  - Key  - RBA
  - For> @ # records
  - Filter> E Filter selected records. (F=File; Q=Quick) (PF6=Edit Filter)
  - File> USER123.SELCOPYI.FLT               Member> TRACKA

Additional Options: - (Enter "/" to display HFS and Profile options.)
  
```

Figure 97. SELCOPYi - SDO Browse/Edit using an SDO.

## Modifying Data

- In **Edit** mode individual record data may be modified by
  - ◆ Overtyping, inserting or deleting data in character or hex.
  - ◆ Executing a **CHANGE** command.
- In **Full Edit** mode, records may be inserted and deleted by
  - ◆ Typing the **INSERT (I)** primary-command.  
e.g. to insert a new **ALBUM** record:
    - ◇ Type **I ALBUM**
    - ◇ The new record will be inserted following the focus record.  
In multi-record (VFMT / CHAR) display modes focus is defined by the cursor position.
  - ◆ Using the **DELETE** primary-command.
- Additionally, in formatted (VFMT) or unformatted (CHAR) multi-record display modes, records may be inserted and deleted using the **standard line-commands**
  - ◆ **Inn** to **insert** records.
  - ◆ **Dnn, DD-DD** to **delete** records.
  - ◆ **Mnn, MM-MM** to **move** records.
- Modifications may be individually undone/redone using **F22 / F23** (normally Shift-F10 / F11) which are set to execute the **UNDO/REDO** primary commands.
  - ◆ Consecutive modifications may be undone by pressing F22 repeatedly.
  - ◆ Consecutive modifications may be redone by pressing F23 repeatedly.
  - ◆ The **UNDOING** primary command controls the following aspects:
    1. Whether the UNDO/REDO facility is activated.
    2. The number of modification levels maintained.
    3. The maximum amount of storage allocated.
  - ◆ Type **Query UNDOING** to determine your current settings.
  - ◆ Type **Help UNDOING** for full information.

## Modifying Record Lengths

- In **Full Edit** mode, the length of a variable length record may be altered in the following ways:
  - ◆ In multi-record (VFMT / CHAR) modes,
    1. Type **RECLEN ON** to display the *Length* record prefix column.
    2. Overtyping the current *Length* value for any individual record.
  - ◆ In single-record (FMT / MAP / UNFMT / HEXD) modes,
    - ◇ Overtyping the current *Length* value.
  - ◆ Using the shift-left / right line-commands:
    - ◇ **(nn** or **((nn-((** to shift-left.
    - ◇ **)nn** or **)nn-))** to shift-right.

Note: Record-length modification may occur only where the right **BOUNDS** setting is higher than the individual record's length.
  - ◆ Using the **SHIFT** primary-command.  
Type **Help Shift** for full information.
  - ◆ Using the **CHANGE** primary-command, in particular when the **DATA** parameter is specified with different length search and replace values.  
Type **Help Change** for full information.

## Working with Segmented Records

Records may be organised in such a way that they are split into a number of logical segments, each segment being mapped by a unique structure (COBOL group or PL1 major/minor structure).

Segmented records begin with a single primary (base) segment immediately followed by any number of non-overlapping, secondary segments. A secondary segment may have the same or different segment record-type (RTO) mapping as other secondary segments in the record. e.g.

```
Record: 1
+-----+-----+-----+-----+-----+
| Primary_1 | Secondary_1 | Secondary_1 | Secondary_1 | Secondary_1 |
+-----+-----+-----+-----+-----+

Record: 2
+-----+-----+-----+-----+
| Primary_1 | Secondary_1 | Secondary_2 | Secondary_2 |
+-----+-----+-----+-----+

Record: 3
+-----+-----+-----+-----+
| Primary_2 | Secondary_1 | Secondary_4 |
+-----+-----+-----+-----+

Record: 4
+-----+-----+-----+-----+
| Primary_1 | Secondary_1 | Secondary_2 | Secondary_3 |
+-----+-----+-----+-----+
```

The record data must contain ID fields that identify which segment mapping is to be used to format individual segments of the record.

ID fields that identify a primary segment mapping must exist within the primary segment data. ID fields that identify a secondary segment mapping may exist within the secondary segment data, within the data of any previously mapped segment belonging to the same record, or, specifically, within the primary segment data.

The third sample dataset contains the same information as the second, but each physical record is comprised of three distinct segment-types:

- A single PRIMARY (BASE) (**ARTIST**) segment followed by....
- a number of SECONDARY (**ALBUM**) segments, each one followed by...
- a number of SECONDARY (**TRACK**) segments

To reproduce the following screen-shot browse the sample dataset in its raw state,

Use the Data Edit (=2) panel to:

- Specify the *Data File*:
  - ◆ Type **userpfx.SELCTRN.ZZST3DAT** in the *Name* field, where *userpfx* is your own user prefix.
- Deactivate the *Structure/Copybook overlay*:
  - ◆ Uncheck the option by removing the */*.

```
SELCOPY/1 - Browse USER123.SELCTRN.ZZST3DAT 32752 V SEQ
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Record type: UnMapped Variable(0,32752) Offset=0 Data elements=1
Length UnMapped
00000001 3626 1Adele
00000002 3358 1Alabama Shakes
00000003 3358 1Alabama 3
00000004 3965 1Alanis Morissette
00000005 2554 1Alex Harvey
00000006 21007 1AC/DC
00000007 3790 1Bob Dylan
00000008 25453 1Bruce Springsteen
00000009 6306 1Bruce Springsteen &#38; The Sessions Band
00000010 3090 1Burt Bacharach &#38; Elvis Costello
00000011 6109 1Christina Aguilera
00000012 410 1Christina Aguilera &#38; Dave Navarro
00000013 3090 1Coldplay
00000014 3358 1Crash Test Dummies
00000015 1750 1Damien Rice
00000016 10003 1David Gray
00000017 946 1Deep Purple
00000018 6787 1Del Amitri
00000019 2822 1Duffy
00000020 1482 1DJ Fresh
00000021 4233 1Embrace
00000022 4162 1Florence + The Machine
00000023 3090 1Gretchen Wilson
00000024 3894 1Guns N' Roses
00000025 946 1Jennifer Hudson
Se | Line=1 | Col=1 | Alt=0,0;0 | Size>26 | Recl=32752 | Fmt=V | Files=1 | View
```

Figure 98. SELCOPYi - SDE Sample Dataset 3.

## Creating an SDO defining Segmented Record-Types

Files with segmented record-types should be mapped by a **SELCOPYi Structured Data Object (SDO)** generated from one or more copybooks.

The sample #3 segmented SDO (member name ZZST3) should be created using the (=9.1) panel in exactly the same way as for (non-segmented) sample #2, except that:

1. The **ARTIST** record-type is defined as *Type DEF*.  
**DEF** record-types **must** be specified **without** identification criteria.
2. The **ALBUM** record-type is defined as *Type SEC*.  
Identification criteria is required.
3. The **TRACK** record-type is defined as *Type SEC*.  
Identification criteria is required.

```

SELCOPY/i - Create STRUCTURE from COBOL/PL1 copybook(s)
File Help                                     wS wR
Command>                                     Scroll> Csr
ZZSGSDOR
Add a table row then press PF2 to specify its record identification-criteria
Create Structure - Define Record-Types.                                     3 Rows
Copybook Type Start Record-Type Name (01-Lev) Record Lang
Library Level Offset
Member
+
000001 ZZST2CPC DEF 1 ARTIST 0 COBOL
000002 ZZST2CPC SEC 1 ALBUM 0 COBOL
000003 ZZST2CPC SEC 1 TRACK 0 COBOL
000004 *** End of Data ***
  
```

Figure 99. SELCOPYi - SDO Create Segmented Structure.

If created in the foreground, a message similar to the following should appear on completion:

```

ZZSD403I Segmented Structure USER123.SELCTRN.SDO(ZZST3) created with 1 primary
(base) segment type(s) and 2 secondary type(s). Maximum segment length 268,
minimum segment length 71.
  
```

## Browse/Edit using a Segmented SDO

At the SDE Browse / Edit panel:

- Specify the *Data File*:
  - ◆ Type **userpfx.SELCTRN.ZZST3DAT** in the *Name* field, where *userpfx* is your own user prefix.
- Specify the *Structure/Copybook overlay*:
  - ◆ Activate the option by entering a / in the left margin field.
  - ◆ Type **userpfx.SELCTRN.SDO** in the *Dsn* field, to specify the PDS library containing the generated Structured Data Object (SDO).
  - ◆ Type **ZZST3** in the *Member* field.
  - ◆ Check the *Type* option for *SDO*. This is actually optional as SELCOPYi will always check to see if the file specified is an SDO before attempting to parse it as COBOL or PL1.
- Press **ENTER** to edit the sample dataset.

```

SELCOPY/i - Browse USER123.SELCTRN.ZZST3DAT using USER123.SELCTRN.SDO(ZZST3)
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
Base(D): ARTIST      Fixed(71) Offset=0 Data elements=3
Length RT          ARTIST
#2      #3
AN 1:1  AN 2:70
>      <---+---1---+---2---+---3---+---4---+---5---+
00000001 71 1      Adele

Segment: ALBUM      Fixed(71) Offset=0 Data elements=3
Length RT          ALBUM
#2      #3
AN 1:1  AN 2:70
>      <---+---1---+---2---+---3---+---4---+---5---+
00000001 71 2      21

Segment: TRACK      Fixed(268) Offset=0 Data elements=53
Length RT          PERSISTENT-ID      TRACK-NUM TRACK-ID NAME
#2      #3          #4          #5 #6
AN 1:1  AN 2:16      ZD 18:3      ZD 21:4 AN 25:120
>      <---+---1---+--->      <->      <-> <---+---1---+---2
00000001 268 3      CB12DD714D51828C      001      2083 Rolling In the Deep
00000001 268 3      2648A25633D15404      002      2085 Rumour Has It
00000001 268 3      9815923C6D2E6830      003      2087 Turning Tables
00000001 268 3      7D003FF752074C18      004      2089 Don't You Remember
00000001 268 3      AED739D8574AA4C5      005      2091 Set Fire to the Rain
00000001 268 3      E755BCE1CF5CDEA7      006      2093 He Won't Go
00000001 268 3      6798C2A80AFB2571      007      2095 Take It All
00000001 268 3      962B35D1647DE75E      008      2097 I'll Be Waiting
00000001 268 3      D8A6C8FDC2802177      009      2099 One and Only
Se | Line=1 | Col=1 | Alt=0,0;0 | Size>7(P) | Recl=32752 | Fmt=V | Files=1 | Vi
  
```

Figure 100. SELCOPYi - SDO Browse/Edit using a Segmented SDO.

### Notes:

- By default, the prefix area indicates the **physical record number** to which each segment is attached.
- Type **PREFix LOGical** to display individual segment numbers in the prefix area.
- Type **PREFix Physical** to reset the prefix to display physical record numbers.
- Type **Help PREFix** for full information.
- The **LOCATE** command is sensitive to the **PREFIX** setting (PHYSICAL|LOGICAL) when used to locate an absolute record / segment number.

## Navigating Segmented Datasets

- Whether in formatted (VFMT / FMT) or unformatted (CHAR / UNFMT / HEXD) display modes, all logical segments are displayed individually. To display the data in its raw state you must edit / browse the dataset with the structure (SDO) deactivated.
- For efficiency reasons the process of separating each physical record into its logical segment is performed once only, at initial load.
- In single-record modes, display is sensitive to the PREFIX setting (PHYSICAL|LOGICAL).

PREFIX Mode	Display
PHYSICAL	Segment> pppppppp / llllll ♦ "pppppppp" denotes the physical record number. ♦ "llllll" denotes the logical segment number within that physical record.
LOGICAL	Segment> ssssssss ♦ "sssssss" indicates the logical segment number within the whole file.

```

SELCPY/i - Browse USER123.SELCTR.N.ZZST3DAT using USER123.SELCTR.N.SDO(ZZST3)
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
Segment: TRACK    Fixed(268) Offset=0 Data elements=53
Segment> 00000025 / 000004    Flags: f          Length:    268

Ref  Field          Type          <---+---1---+---2---+---3---+---4
#1   1 TRACK          AN 1:268
#2   5 RT             AN 1:1      3
#3   5 PERSISTENT-ID  AN 2:16     EF4AB531C8FBF021
#4   5 TRACK-NUM      ZD 18:3     007
#5   5 TRACK-ID       ZD 21:4     4203
#6   5 NAME           AN 25:120    You Pulled Me Through
          41 -      80
          81 -     120

#7   5 TOTAL-TIME     FB 145:4     219133
#8   5 FILE-SIZE      FB 149:4     7763606
#9   5 BIT-RATE       FB 153:2     256
#10  5 SAMPLE-RATE    PD 155:3     44100
#11  5 YEAR           ZD 158:4     2008
#12  5 NORMALIZATION  PD 162:3     4645
#13  5 DISC-NUMBER    ZD 165:3     001
#14  5 ALBUM-ARTIST   AN 168:41    Jennifer Hudson
          41 -      41

#15  5 RELEASE-DATE   AN 209:20
#16  7 RELEASE-YYYY   AN 209:4     2008
#18  7 RELEASE-MM     AN 214:2     09
#20  7 RELEASE-DD     AN 217:2     29
#22  7 RELEASE-HH     AN 220:2     07
#24  7 RELEASE-MN     AN 223:2     00

Se  Line=563  Col=1  Alt=0,0;0  Size>26(P)  Recl=32752  Fmt=V  Files=1
  
```

Figure 101. SELCOPYi - SDE Formatted Single-Segment Display Mode (FMT/MAP).

- In formatted (FMT / MAP) or unformatted (UNFMT / HEXD) single-record modes, the scrolling keys **F10** / **F11** will navigate to the next/prev **visible segment**, regardless of its type (PRIMARY/SECONDARY).
- In both formatted multiple- (VFMT) and single-record (FMT / MAP) display, the **NEXT (N)** and **PREV (P)** primary commands may be used to navigate more specifically to segments, based on their segment-type.
  - ♦ Type **N B** to scroll to the next base (primary) segment.
  - ♦ Type **N ALBUM** to scroll to the next segment of the type ALBUM.
  - ♦ Type **N /** to scroll to the next segment of the same type as the focus segment.
  - ♦ Type **N ?** to scroll to the next segment of a different type from focus segment.
  - ♦ Type **Help NEXT** for full information.



## Modifying Segmented Datasets

---

- Individual segment data may be modified by
  - ◆ Overtyping, inserting or deleting data in character or hex.
  - ◆ Executing a **CHANGE** command.
- Segments may be inserted and deleted by
  - ◆ Typing the **INSERT** primary-command. e.g. to insert a new **ALBUM** segment:
    - ◇ Type **I ALBUM**
    - ◇ The new segment will be inserted following the focus segment.
    - In multi-segment (VFMT / CHAR) display modes focus is defined by the cursor position.
  - ◆ Using the **DELETE** primary-command.
- Additionally, in formatted (VFMT) or unformatted (CHAR) multi-segment display modes, both **PRIMARY** and **SECONDARY** segments may be inserted, deleted and moved using the **standard line-commands**
  - ◆ **Inn** to **insert** segments.
  - ◆ **Dnn, DD-DD** to **delete** segments.
  - ◆ **Mnn, MM-MM** to **move** segments.

Note that secondary segments may be **detached** and **reattached** to different primary segments using **move operations**.
- Modifications may be individually undone/redone using **F22 / F23** (normally Shift-F10 / F11) which are set to execute the **UNDO/REDO** primary commands.
  - ◆ Consecutive modifications may be undone by pressing F22 repeatedly.
  - ◆ Consecutive modifications may be redone by pressing F23 repeatedly.
  - ◆ The **UNDOING** primary command controls the following aspects:
    1. Whether the UNDO/REDO facility is activated.
    2. The number of modification levels maintained.
    3. The maximum amount of storage allocated.
  - ◆ Type **Query UNDOING** to determine your current settings.
- Modifications to fields referenced by **segment identification criteria** will result in the segment prefix area being flagged with **==ID>**.
 

This indicates that the modification will potentially cause the segment-type to re-assigned. Immediate re-assignment does not take place automatically. This is deliberate, since the user may be in the midst of several changes.

Re-assignment of segment-type may be explicitly requested using:

  - ◆ The **ID** line-command.
  - ◆ The **IDentify** primary-command.
  - Type **Help IDentify** for full information.
- The status of a segment being either **PRIMARY** or **SECONDARY** will not be altered by an **IDENTIFY** process. To alter an individual segment's **PRIMARY / SECONDARY** status use:
  - ◆ The **STP** line-command to make the selected record a **PRIMARY** segment.
  - ◆ The **STS** line-command to make the selected record a **SECONDARY** segment.

## Inserting/Deleting Primary (Base) Segments

---

- **Insert** of a primary (base) segment will cause a new physical record to be created in the file.
- **Delete** of a primary (base) segment will cause all its secondary segments to become attached to the **previous primary segment**. Beware that this may result in the creation of a physical record that exceeds the file's defined maximum

## Modifying Segment Lengths

---

- The length of a segment may be altered in the following ways:
  - ◆ In multi-segment (VFMT / CHAR) modes,
    1. Type **RECLEN ON** to display the *Length* segment prefix column.
    2. Overtyping the current *Length* value for any individual segment.
  - ◆ In single-segment (FMT / MAP / UNFMT / HEXD) modes,
    - ◇ Overtyping the current *Length* value.
  - ◆ Using the shift-left / right line-commands:
    - ◇ **(nn** or **((nn-((** to shift-left.
    - ◇ **)nn** or **)nn-))** to shift-right.
  - ◆ Using the **SHIFT** primary-command.
  - ◆ Using the **CHANGE** primary-command.

## Option 5 - File Copy/Reformat (FCOPY)

---

The SELCOPY/i File Copy/Reformat utility (FCOPY) copies records from one or more input file to a single output file, or to one or more members of a (PDS/PDSE) library. Input and output access methods, record-format and geometry may be mixed without restriction, and the copy process may be executed either online or in batch.

The output may be specified as:

- a single PDS/PDSE library member
- a PDS/PDSE library DSN (multiple member names implied by the input)
- a flat sequential dataset
- a VSAM KSDS, ESDS, RRDS/VRDS.
- a Hierarchical File System (HFS/ZFS) file.

The input may similarly be specified, with multiple input files defined using wildcards within each of the following file name components:

- Dataset name
- HFS path file-name (not directory)
- PDS/PDSE Member name
- Volume name

Access method, record-format and geometry for multiple input file may also be mixed without restriction.

Records may be selectively copied by specifying any combination of the following, which are applied to each input file:

- Start record number
- Start record key, or partial key (VSAM KSDS files only)
- Start relative-byte address (RBA) (VSAM ESDS/KSDS files)
- Number of records to process
- Record selection criteria (FILTER)

Records may be reformatted as they are copied by specifying an input and output structure/copybook. Specification of an input structure also enables record selection based on record-type and/or the content of fields defined by the structure.

Additionally, although not recommended for high volume output, copy to a VSAM KSDS may optionally be performed for records out of key sequence.

A handy aspect of the File Copy/Reformat utility is the ability to peek at the relevant files directly from the panel.

- F19 (Shift-F7) to browse the Input Data file
- F20 (Shift-F8) to browse the Output Data file
- F22 (Shift-F10) to browse the Input Copybook
- F23 (Shift-F11) to browse the Output Copybook

## The File Copy/Reformat (FCOPY) Panel

The FCOPY panel may be started using any of the following methods:

- Select option **5** from the **SELCOPYi** Primary Option Menu (=).
- At any primary command prompt type **=5**.
- At any primary command prompt type **FCOPY** (FC).
- From any dataset, library or HFS path list window, use the **C** line-command.

### Copying a Standard Sequential Dataset

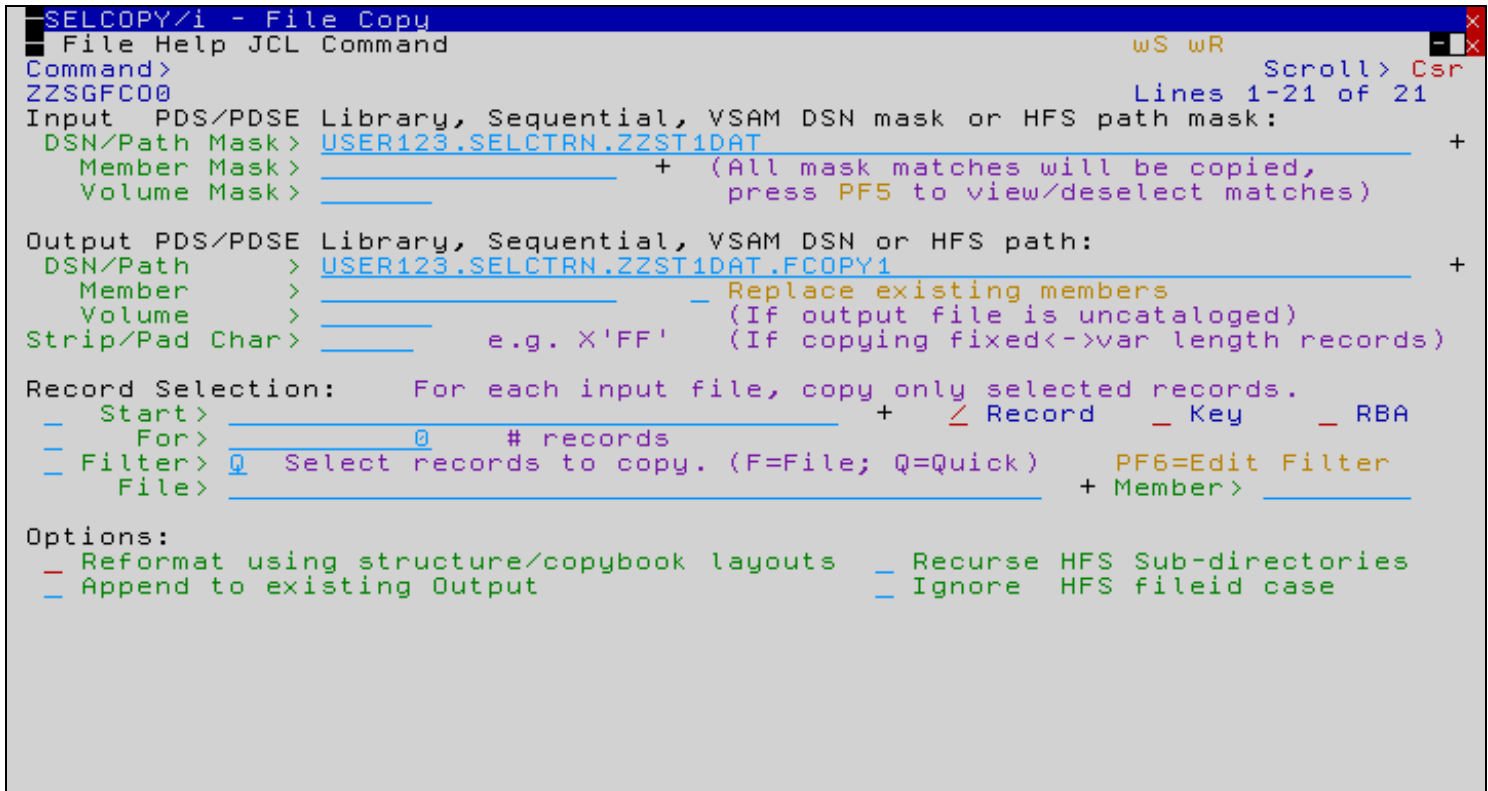


Figure 102. SELCOPYi - File Copy/Reformat (FCOPY) Panel (=5).

To follow the demonstration use the panel to make a complete copy of supplied sample dataset 1.

- Specify the *Input File*:
  - ◆ Type **userpfx.SELCTRN.ZZST1DAT** in the *DSN/Path Mask* field, where *userpfx* is your own user prefix.

If wildcards are specified then a dataset list will be displayed from which you can select one or more files for processing. Initially **ALL** files are selected, but you may press **F5/F6** to toggle back and forth between all files being selected or deselected. Further selection/deselection may be made by manually overtyping the *Sel* column for each individual entry.

Where PDS/PDSE datasets are to be processed a further member selection list may be accessed by placing the cursor on the library name and pressing **ENTER**. Within the dataset list, the member mask field may be overtyped to refine member selection individually for each library.

Press **F3** to return to the FCOPY panel once all input selections have been confirmed.
- ◆ The *Member Mask* field should be left blank in this case, otherwise the dataset list will be restricted to PDS/PDSE libraries only.
- ◆ The *Volume Mask* field should be left blank in this case, otherwise the dataset list will be restricted to files residing on matching volumes only.
- Specify the *Output File*:
  - ◆ Type **userpfx.SELCTRN.ZZST1DAT.FCOPY1** in the *DSN/Path* field. If wildcards are specified then a dataset list will be displayed from which you can make a selection.
  - ◆ If the name entered is for a dataset that does not yet exist, then you will be prompted to create it.
  - ◆ The *Member* field should be left blank. otherwise the dataset list will be restricted to PDS/PDSE libraries only.
  - ◆ The *Volume* field should be left blank.
- Press **ENTER** to continue.

## Choose New Output File Access Method

- If the output file does not yet exist, you will be prompted to create it and given the choice of the access method to be used.
- The *Dataset Organisation* input field will automatically be primed to match the input file, **N** for a **Non-VSAM** standard sequential file in this case.
- Permitted options are:

Option	Description
L	To allocate a new PDS/PDSE library.
N	To allocate a new standard sequential (Non-VSAM) file.
K	To define a new VSAM KSDS.
E	To define a new VSAM ESDS.
R	To define a new VSAM RRDS.

- Press **ENTER** or select the **OK** button to continue.

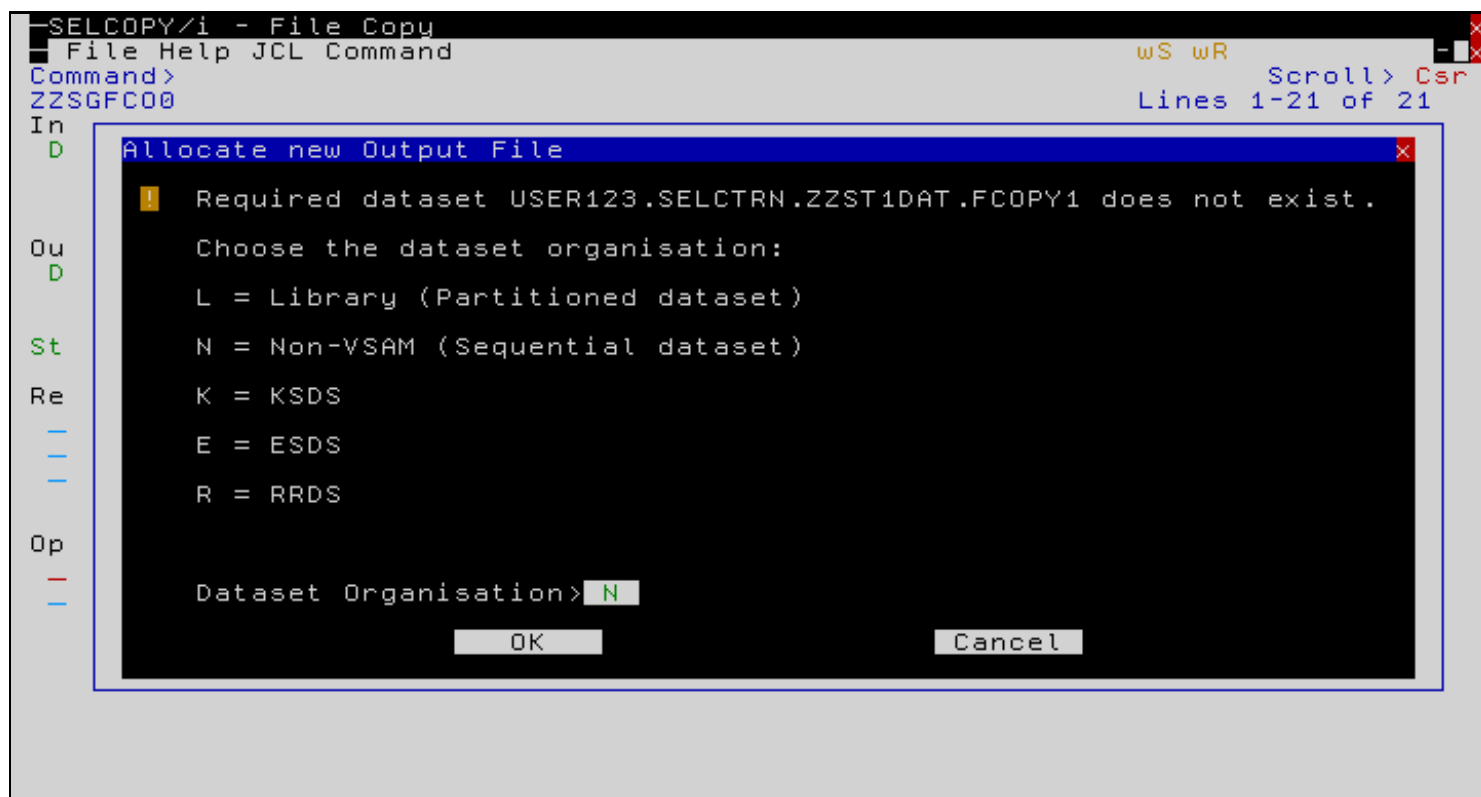


Figure 103. SELCOPYi - Choose new Output file Access Method.

## Allocate New Output File

- The allocation dialog will be displayed next allowing you to enter various details for your new file.
- Initial values will be primed using the input file as a model, provided it is of a compatible type.
- You may overwrite any of the values displayed in green, and/or enter an alternative model dataset then press ENTER to retrieve its details.
- Select the **Allocate** button to create the file (note that pressing ENTER the first time will place the cursor on the **Allocate** button).
- A message box will appear confirming the new file has been created.
- Press **F3** to continue with the copy process.
- For large file copies a progress window will be displayed, indicating how many records have so far been read, selected etc.
- You may use the **3270 Attention key** to interrupt the copy process. But remember to first unlock the keyboard by pressing the **3270 Reset key**. Please consult your 3270 emulator's keyboard settings/help if you're unsure of which physical keys are mapped to these 3270 functions.
- A summary message (detailing the number of records copied etc), will be displayed once the copy process has completed.

```

SELCOPY/i - Allocate new Output File
Define Help
Dataset> USER123.SELCTRN.ZZST1DAT.FCOPY1
Model> USER123.SELCTRN.ZZST1DAT
Volume> CBLM15
MaxVol> 1
Unit> 3390
Type> SEQ (SEQ|PDS|PDSE)
Retention period> 0 (0-9999)
Expiry date> (yyyyddd)

Space Allocation      DCB Information      SMS Classes
Allocation Unit> TRACKS
Primary> 2
Secondary> 2
Directory Blocks> 0
Organisation: PS
Record Format> FB
Record Length> 407
Blocksize> 27676
Data>
Storage> CBLDFLT
Management> CBLDFLT

Allocate      Cancel      Help
  
```

Figure 104. SELCOPYi - Allocate new Non-VSAM file.

## Copying PDS/PDSE Library members

- Specify the *Input File*:
  - Type **userpfx.SELCTRN.ZZST5DAT** in the *DSN/Path Mask* field, where *userpfx* is your own user prefix.
  - Type **TRACK02\*** in the *Member Mask* field.
- Specify the *Output File*:
  - Type **userpfx.SELCTRN.ZZST5DAT.FCOPY1** in the *DSN/Path* field.
- Press **ENTER** to continue.

```

SELCOPY/i - File Copy
File Help JCL Command
Command>
ZZSGFC00
Input PDS/PDSE Library, Sequential, VSAM DSN mask or HFS path mask:
  DSN/Path Mask> USER123.SELCTRN.ZZST5DAT
  Member Mask> TRACK02*
  Volume Mask>
Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
  DSN/Path> USER123.SELCTRN.ZZST5DAT.FCOPY1
  Member>
  Volume>
Strip/Pad Char> e.g. X'FF'
Record Selection: For each input file, copy only selected records.
  Start>
  For> @ # records
  Filter> Q Select records to copy. (F=File; Q=Quick)
  File>
Options:
  Reformat using structure/copybook layouts
  Append to existing Output
  Recurse HFS Sub-directories
  Ignore HFS fileid case
  
```

Figure 105. SELCOPYi - COPY Library Members.

## Select Input Datasets List

- If the input file mask matches more than one dataset, or matches a PDS/PDSE library then a file selection list will be displayed.
- Within the dataset list, the member mask field may be overtyped to refine member selection individually for each selected library.
- Place your cursor on the library dataset then press **ENTER** to access the member selection panel if required. If the member selection panel is not accessed then all members matching the mask will be included in the copy process.

```

SELCOPY/i - Select Files to Process
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
ZZSGFSU1
Select files to be included in the operation.          PF6=Select/Deselect ALL
File Mask> USER123.SELCTRN.ZZST5DAT(TRACK02*)      +
To (de)select members place cursor on each lib name and press ENTER.          1 Row
Sel File Name          Member      Volume Org VSAM GDG RecFm Lrecl
Mask
+
+
- <---+-----1-----+-----2---> <---+---> <---+> <-> <--> - <---> <--->
*** Top of Data ***
S  USER123.SELCTRN.ZZST5DAT TRACK02*          PO          N    FB          407  000001
*** End of Data ***
  
```

Figure 106. SELCOPYi - Select Input Library.

## Select input Members

- Individual members may be selected/deselected for copy from this screen.
- Initially **ALL** members are selected, but you may press **F5/F6** to toggle back and forth between all files being selected or deselected.
- Further selection/deselection may be made by manually overtyping the *Se/* column for each individual entry.
- The sample screen shot below shows members **TRACK020** and **TRACK023** only selected for copy.

```

SELCOPY/i - Select Input Members
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
ZZSGFSU2
Select members to be included in the operation.          PF6=Select/Deselect ALL
Member Mask> TRACK02*
Select Members to process.
Sel Member      Alias Created      LastMod      Cursize Inisize TTR      Us      4 Rows
-  <---+---> -  <---+---> <---+---1---+> <---+> <---+> <---+> <---
*** Top of Data ***
S  TRACK020 N                0          0  0000F5  000001
-  TRACK021 N                0          0  0000F6  000002
-  TRACK022 N                0          0  0000F7  000003
S  TRACK023 N                0          0  0000F8  000004
*** End of Data ***

```

Figure 107: SELCOPYi - Select Input Members.



## Allocate New Output Library

- Press **F3** to return to the File Copy panel once all selections have been made, then press **ENTER** to continue with the copy.
- You will then be prompted to allocate your new output library.

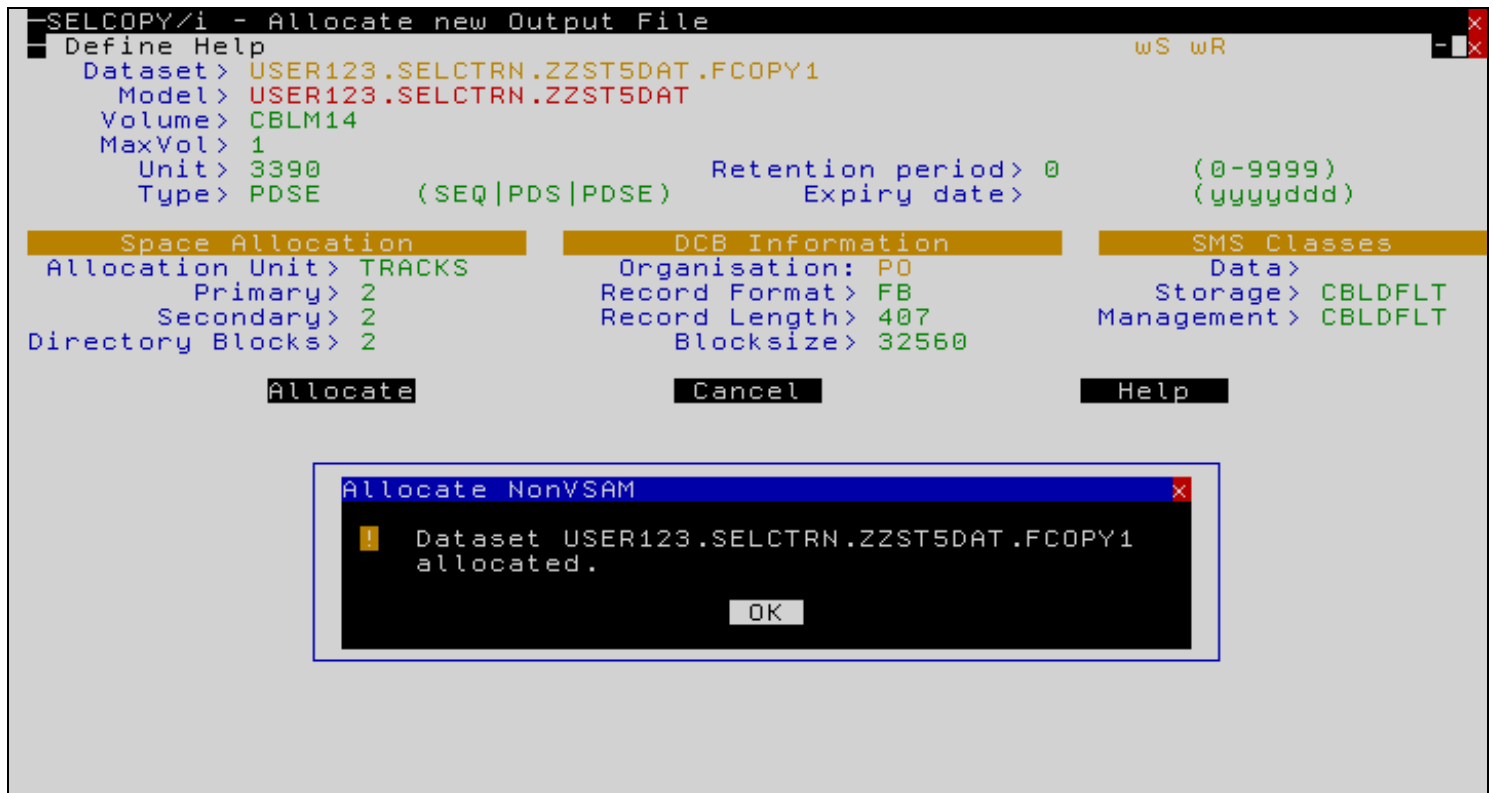


Figure 108. SELCOPYi - Allocate New Output Library.

## PDS Copy Statistics

- A summary message and the PDS Copy Statistics list are displayed once the copy process has completed.
- For each member processed the **Action** column will contain one of the following:

Action	Meaning
Copied	The member was copied to the output library.
Replaced	The member replaced an existing version in the output library.
*NoRepl	The member already existed in the output library, and the <i>Replace existing members</i> option was not selected.

- You may type the **TEXT** primary command or select the "Text" menu bar item to create a temporary text-edit document containing the statistics information.

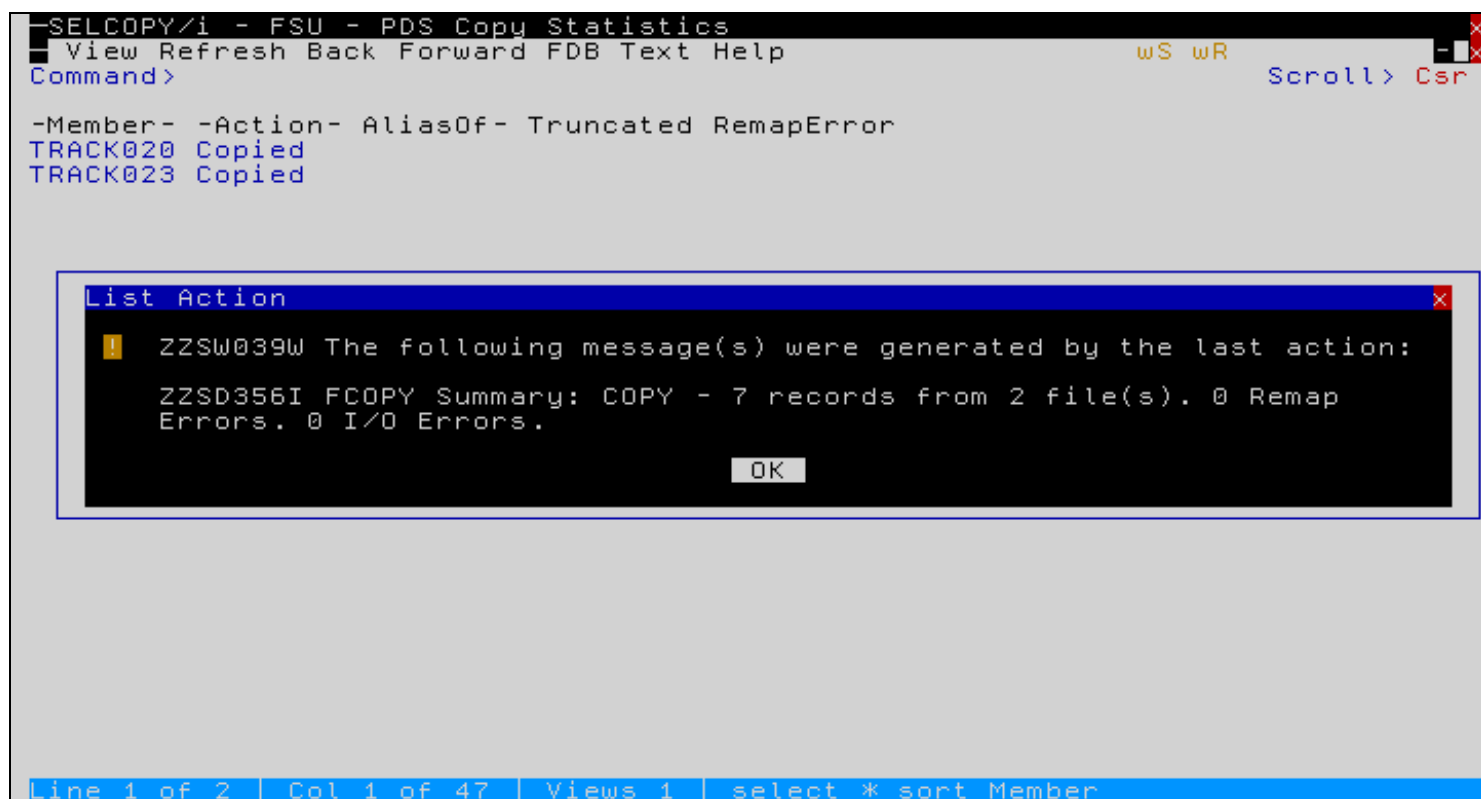


Figure 109. SELCOPY/i - PDS Copy Statistics.

## Record Selection

- Specify the *Input File*:
  - Type **userpfx.SELCTRN.ZZST2DAT** in the *DSN/Path Mask* field, where *userpfx* is your own user prefix.
- Specify the *Output File*:
  - Type **userpfx.SELCTRN.ZZST2DAT.ESDS1** in the *DSN/Path* field.

```

SELCOPY/i - File Copy
File Help JCL Command
Command>
ZZSGFC00
Input PDS/PDSE Library, Sequential, VSAM DSN mask or HFS path mask:
  DSN/Path Mask> USER123.SELCTRN.ZZST2DAT
  Member Mask>
  Volume Mask>
Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
  DSN/Path> USER123.SELCTRN.ZZST2DAT.ESDS1
  Member>
  Volume>
Strip/Pad Char> e.g. X'FF'
Record Selection: For each input file, copy only selected records.
  Start>
  For> @ # records
  Filter> Q Select records to copy. (F=File; Q=Quick)
  File>
Options:
  Reformat using structure/copybook layouts
  Append to existing Output
  Recurse HFS Sub-directories
  Ignore HFS fileid case
  
```

Figure 110. SELCOPYi - Record Selection Intro.

## Browse Input File

- In order to assist with record selection its very helpful to peek at the file you wish to select from.
- From the File Copy panel press **F19 (Shift-F7)** to **browse** the input file.
- We will initially select to copy records 16 to 20.

```

SELCOPY/i - Browse USER123.SELCTRN.ZZST2DAT 268 V SEQ
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Press PF4 for Utilities menu including point/shoot options
Record type: UnMapped Variable(0,268) Offset=0 Data elements=1
Length UnMapped
<---+---1---+---2---+---3---+---4---+---5---+---6---
00000001 71 1Adele
00000002 71 221
00000003 268 3CB12DD714D51828C00A208CRolling In the Deep
00000004 268 32648A25633D1540400B208ERumour Has It
00000005 268 39815923C6D2E683000C208GTurning Tables
00000006 268 37D003FF752074C1800D208IDon't You Remember
00000007 268 3AED739D8574AA4C500E209ASet Fire to the Rain
00000008 268 3E755BCE1CF5CDEA700F209CHe Won't Go
00000009 268 36798C2AB0AFB257100G209ETake It All
00000010 268 3962B35D1647DE75E00H209GI'll Be Waiting
00000011 268 3D8A6C8FDC280217700I209IOne and Only
00000012 268 32502515DEB53501001{210ALovesong
00000013 268 3E374BE6EE7C86B1D01A210CSomeone Like You
00000014 268 3D4EB4EBF4651EF2001B210EI Found a Boy (Bonus Track)
00000015 268 3CEC92B1BA3204A0A01C210GAdele 21 - A Track By Track Interview
00000016 71 1Alabama Shakes
00000017 71 2Boys &#38; Girls
00000018 268 36D4C2C7BA7E0159300A416IHold On
00000019 268 3E241B09CC251C38600B417AI Found You
00000020 268 3E74C16BCB319870C00C417CHang Loose
00000021 268 3214ED5D95B84533C00D417ERise to the Sun
00000022 268 30E421AFCD141D22D00E417GYou Ain't Alone
00000023 268 3FF47FB9E05DE896700F417IGoin' to the Party
00000024 268 35D46C681552440BF00G418AHeartbreaker
Se | Line=0 | Col=1 | Alt=0,0;0 | Size>228 | Recl=268 | Fmt=V | Files=1 | Views

```

Figure 111. SELCOPYi - Browse Input File.

## Specifying Start Record / Number of Records to Copy

- Press **F3** to return to the File Copy panel.
- In the **Record Selection** section, activate the *Start* option by entering a / in the left margin field.
- Enter the start record number **16** in the *Start* field.
- Ensure that the *Record/Key/RBA* selectable option to the right is set to **Record**. This switch indicates the type of *Start* value provided.

Option	Meaning
Record	Start value is a record number. Value may be specified using 1234 or X'1234' notation.
Key	Start value is a VSAM KSDS key or partial key. Value may be specified using xxxx, 'xxxx', C'xxx' or X'1234' notation.
RBA	Start value is a VSAM ESDS/KSDS relative byte address (RBA). Value may be specified using 1234 or X'1234' notation.

- Activate the *For* option by entering a / in the left margin field.
- Enter the number of records to copy **5** in the *For* field.
- Press **ENTER** to continue.

```

SELCOPY/i - File Copy
File Help JCL Command
Command>
ZZSGFC00
Input PDS/PDSE Library, Sequential, VSAM DSN mask or HFS path mask:
  DSN/Path Mask> USER123.SELCTRN.ZZST2DAT
  Member Mask>
  Volume Mask>
Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
  DSN/Path> USER123.SELCTRN.ZZST2DAT.ESDS1
  Member>
  Volume>
Strip/Pad Char> e.g. X'FF'
Record Selection: For each input file, copy only selected records.
  / Start> 16 + / Record _ Key _ RBA
  / For> 5 # records
  - Filter> Q Select records to copy. (F=File; Q=Quick) PF6=Edit Filter
  File> + Member>
Options:
  - Reformat using structure/copybook layouts _ Recurse HFS Sub-directories
  - Append to existing Output _ Ignore HFS fileid case
  
```

Figure 112. SELCOPYi - Start Record/For.

## Choose New Output File Access Method

- The *Dataset Organisation* input field will automatically be primed to match the input file, **N** for a **Non-VSAM** standard sequential file in this case.
- But we wish to create a VSAM ESDS, so enter **E** instead.
- Press **ENTER** to continue.

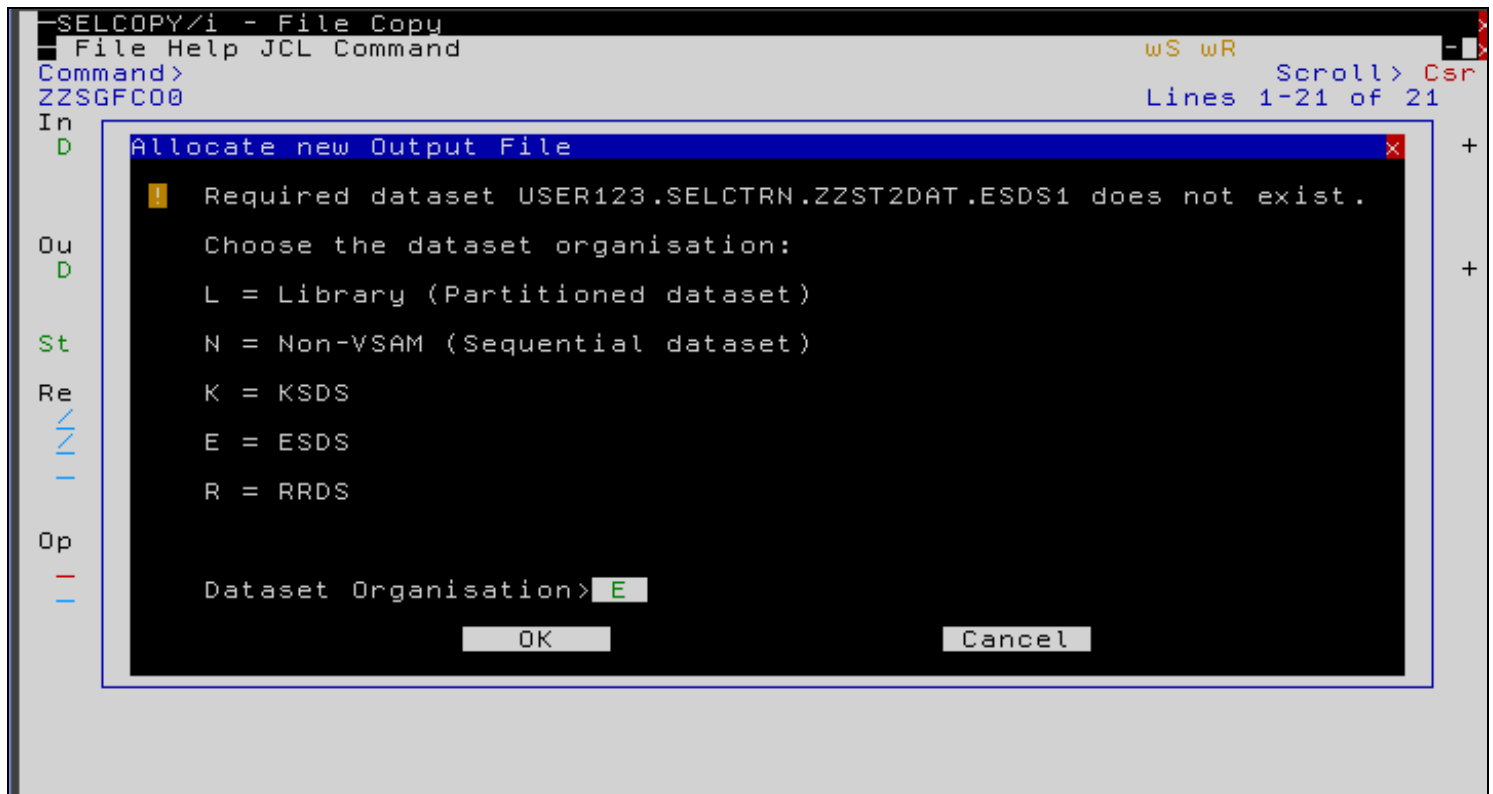


Figure 113. SELCOPYi - SDE LOCATE field.

## Define New VSAM Output File

- The Define ESDS dialog will be displayed next allowing you to enter various details for your new file.
- Initial values will NOT be primed using the input file as a model since, in this case, it is not of a compatible type.
- You may overwrite any of the values displayed in green, and/or enter an alternative model dataset then press ENTER to retrieve its details.
- Enter the value **268** in the *Avg rec len* field.
- Enter the value **268** in the *Max rec len* field.
- Select the **Define** button to create the file (note that pressing ENTER the first time will place the cursor on the **Define** button).
- A message box will appear confirming the new file has been created.

SELCOPY/i - Allocate new Output File

File Edit Actions Options Utilities Window SwapList Help wS wR

Cluster Name> USER123.SELCTRN.ZZST2DAT.ESDS1 Type> ESDS

Model> Reuse> N

Catalog> Span> N

Avg rec len> 268 Speed> N

Max rec len> 268 Writecheck> N

Buffer size> Erase> N

Expiry> Owner>

Region share option> 1 SMS Data Class>

System share option> 3 SMS Stor Class>

SMS Mgmt Class>

Data name> USER123.SELCTRN.ZZST2DAT.ESDS1.DATA

Volumes>

Space type> TRACKS Primary> 1 Secondary> 1

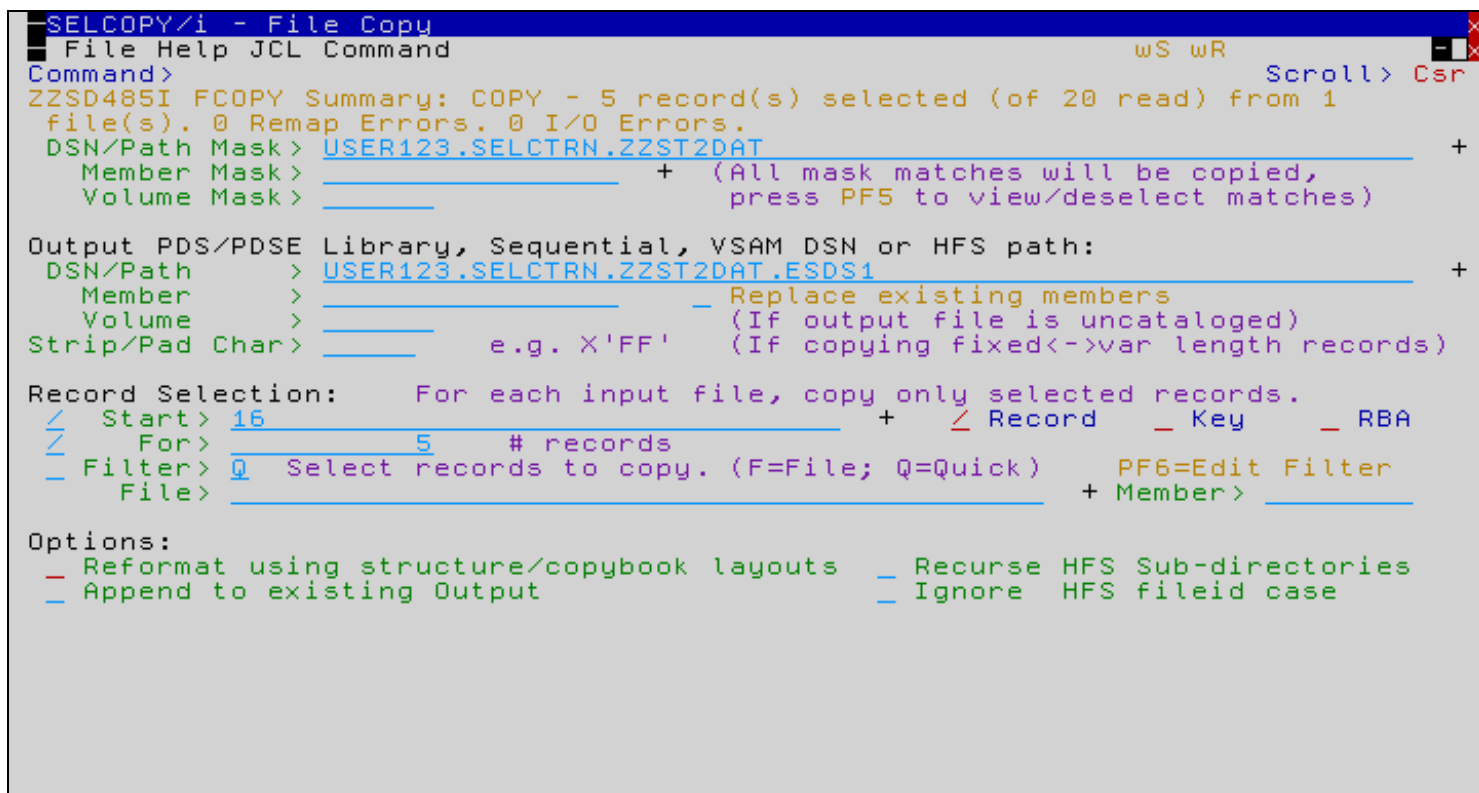
CI Size> 4096

Define Cancel Help

Figure 114. SELCOPYi - Define ESDS.

## Copy Summary Message

- Press **F3** to return to the File Copy dialog.
- Press **ENTER** to continue with the copy process.
- For large file copies a progress window will be displayed, indicating how many records have so far been read, selected etc.
- You may use the **3270 Attention key** to interrupt the copy process. But remember to first unlock the keyboard by pressing the **3270 Reset key**. Please consult your 3270 emulator's keyboard settings/help if you're unsure of which physical keys are mapped to these 3270 functions.
- A summary message (detailing the number of records copied etc), will be displayed once the copy process has completed.



```

SELCOPY/i - File Copy
File Help JCL Command
Command>
ZZSD485I FCOPY Summary: COPY - 5 record(s) selected (of 20 read) from 1
file(s). 0 Remap Errors. 0 I/O Errors.
DSN/Path Mask> USER123.SELCTRN.ZZST2DAT
Member Mask>
Volume Mask>
+ (All mask matches will be copied,
press PF5 to view/deselect matches)

Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
DSN/Path > USER123.SELCTRN.ZZST2DAT.ESDS1
Member >
Volume >
Strip/Pad Char> e.g. X'FF'
- Replace existing members
- (If output file is uncataloged)
- (If copying fixed<->var length records)

Record Selection: For each input file, copy only selected records.
/ Start> 16 + / Record _ Key _ RBA
/ For> 5 # records
- Filter> Q Select records to copy. (F=File; Q=Quick) PF6=Edit Filter
File> + Member>

Options:
- Reformat using structure/copybook layouts _ Recurse HFS Sub-directories
- Append to existing Output _ Ignore HFS fileid case
  
```

Figure 115. SELCOPYi - Summary message.



## Browse the Output File (F20)

- From the File Copy panel you may press **F20 (Shift-F8)** to **browse** the output file.

```

SELCOPY/i - Browse USER123.SELCTRN.ZZST2DAT.ESDS1 407 V ESDS
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Press PF4 for Utilities menu including point/shoot options
Record type: UnMapped Variable(0,407) Offset=0 Data elements=1
Length UnMapped
<---+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----
00000001 71 1Alabama Shakes
00000002 71 2Boys &#38; Girls
00000003 268 36D4C2C7BA7E0159300A416IHold On
00000004 268 3E241B09CC251C38600B417AI Found You
00000005 268 3E74C16BCB319870C00C417CHang Loose
00000006 *** End of Data ***

Se | Line=0 | Col=1 | Alt=0,0;0 | Size=5 | Recl=407 | Fmt=V | Files=1 | Views=0

```

Figure 116. SELCOPYi - Browse Output File (F20).

## Using a FILTER to Select Records for Copy

You may wish to select records for copy based on specific selection criteria.

For example, to copy only the first 7 records that contain '3' in record position 1, and the string 'BLUES' anywhere in the record,

- Update the *Output File*:
  - ◆ Type **userpfx.SELCTRN.ZZST2DAT.ESDS2** in the *DSN/Path* field.
- In the **Record Selection** section, activate the *Filter* option by entering a / in the left margin field.
- Enter **Q** (Quick Filter) in the *Filter* field.
- The *Start* and *For* fields may be used to restrict records eligible for selection by the filter, but for our example these options should be deactivated.

```

SELCOPY/i - File Copy
File Help JCL Command
Command>
ZZSGFC00
Input PDS/PDSE Library, Sequential, VSAM DSN mask or HFS path mask:
  DSN/Path Mask> USER123.SELCTRN.ZZST2DAT
  Member Mask>
  Volume Mask>
Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
  DSN/Path> USER123.SELCTRN.ZZST2DAT.ESDS2
  Member>
  Volume>
Strip/Pad Char> e.g. X'FF'
Record Selection: For each input file, copy only selected records.
  Start>
  For> @ # records
  Filter> / Select records to copy. (F=File; Q=Quick)
  File>
Options:
  Reformat using structure/copybook layouts
  Append to existing Output
  Recurse HFS Sub-directories
  Ignore HFS fileid case
  
```

Figure 117. SELCOPYi - Specify Quick Filter.

## Specifying Simple FILTER Selection Criteria

- Enter **7** in the *Limit* field to restrict the number of records selected.
- Enter **I** in the *Type* field to specify that selected records should be **included** in the copy process.
- Enter **1** into the *Position* column of table row 1 (this is the default).
- Enter **1** into the *Length* column.
- Enter **=** (equals) into the *ROp* (Relational Operator) column (this is the default).  
Alternatively enter blank to get a list of available operators from which you may make your selection (by placing the cursor and pressing ENTER).
- Enter **3** into the *Value* column.
- Replicate table entry line 1 by typing **R** into the table prefix area (000001).  
The *AND/OR* column will automatically set to **AND**.
- Enter **1** into the *Position* column of inserted table row 2 (this is the default).
- Enter **0** into the *Length* column of inserted table row 2 (this is the default). A length value of zero has a special meaning indicating the length of data from the start position to end of the record.
- Enter **<<** (which means "contains") into the *ROp* (Relational Operator) column of inserted table row 2.
- Enter **blues** into the *Value* column.
  - ♦ For simple case-insensitive character strings there is no need to add quotes (this will be done automatically).
  - ♦ You may specify the string using **C'ABCD'** notation if case-sensitivity is required.
  - ♦ Hex strings may be specified using **X'1234'** notation.

```

SELCOPY/i - Quick Filter - Selection Criteria
File Help                                wS wR
Command>                                Scroll> Csr
ZZSGFLTQ

Limit> 7 (0=No limit)  Type> I (I=INCLUDE, X=EXCLUDE)
PF1=Help  PF3=Continue  PF22/23=UNDO/REDO

Quick FILTER - Selection Criteria.                2 Rows
AND Position Length ROp Value
/OR
<-> <---+> <---+> <-> <---+---1---+---2---+---3---+---4---+>
000001      1      1  =   3
000002 AND      1      0 << 'blues'
000003 *** End of Data ***
  
```

Figure 118. SELCOPYi - Quick Filter.

## Filtered Copy Summary Message

- Press **F3** to return to the File Copy dialog.
- Press **F6** (FILTER) should you wish to review/modify your filter selection criteria.
- Press **ENTER** to continue with the copy process. You will be prompted to create your new output file once again. You should choose to create another ESDS, entering the name of the ESDS created in the **previous example** as a model.
- Press **F3** to return to the File Copy dialog again, then press **ENTER** to continue with the copy process.
- A summary message (detailing the number of records selected etc), will be displayed once the copy process has completed.

```

SELCOPY/i - File Copy
File Help JCL Command          wS wR
Command>                      Scroll> Csr
ZZSD485I FCOPY Summary: COPY - 7 record(s) selected (of 1072 read) from 1
file(s). 0 Remap Errors. 0 I/O Errors.
DSN/Path Mask> USER123.SELCTRN.ZZST2DAT +
Member Mask> _____ + (All mask matches will be copied,
Volume Mask> _____ press PF5 to view/deselect matches)

Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
DSN/Path      > USER123.SELCTRN.ZZST2DAT.ESDS2 +
Member        > _____ Replace existing members
Volume        > _____ (If output file is uncataloged)
Strip/Pad Char> _____ e.g. X'FF' (If copying fixed<->var length records)

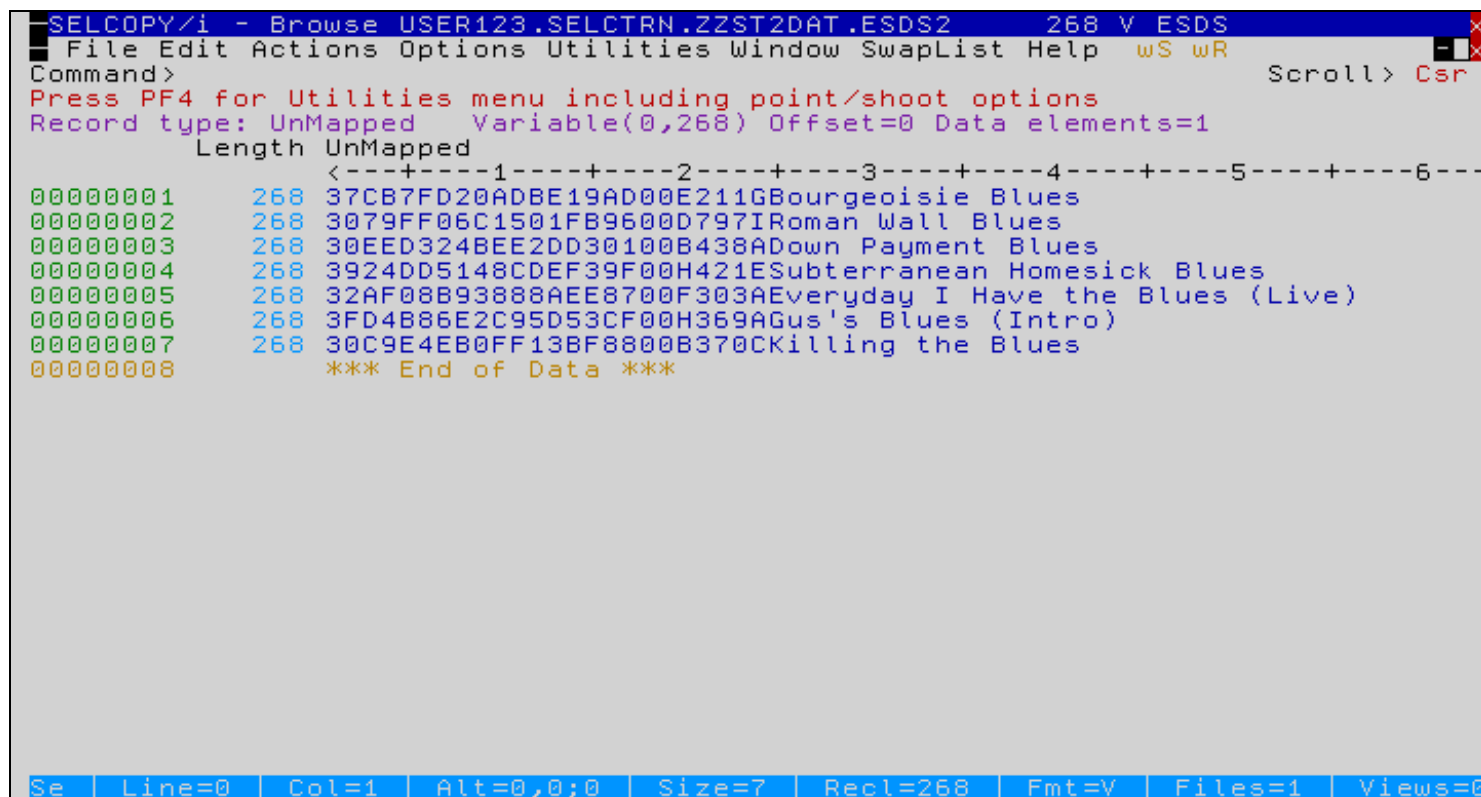
Record Selection: For each input file, copy only selected records.
- Start> _____ + / Record _ Key _ RBA
  For> _____ @ # records
  Filter> @ Select records to copy. (F=File; Q=Quick) PF6=Edit Filter
  File> _____ + Member> _____

Options:
- Reformat using structure/copybook layouts _ Recurse HFS Sub-directories
- Append to existing Output _ Ignore HFS fileid case
  
```

Figure 119. SELCOPY/i - Filtered Copy Summary Message.

## Browse Output File

When you press **F20 (Shift-F8)** to browse the output file you should expect to see the following.



```

SELCOPY/i - Browse USER123.SELCTRN.ZZST2DAT.ESDS2      268 V ESDS
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
Press PF4 for Utilities menu including point/shoot options
Record type: UnMapped   Variable(0,268) Offset=0 Data elements=1
Length UnMapped
<---+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----
00000001      268 37CB7FD20ADBE19AD00E211GBourgeoisie Blues
00000002      268 3079FF06C1501FB9600D797IRoman Wall Blues
00000003      268 30EED324BEE2DD30100B438ADown Payment Blues
00000004      268 3924DD5148CDEF39F00H421ESubterranean Homesick Blues
00000005      268 32AF08B93888AEE8700F303AEveryday I Have the Blues (Live)
00000006      268 3FD4B86E2C95D53CF00H369AGus's Blues (Intro)
00000007      268 30C9E4EB0FF13BF8800B370CKilling the Blues
00000008      *** End of Data ***

Se | Line=0 | Col=1 | Alt=0,0;0 | Size=7 | Recl=268 | Fmt=V | Files=1 | Views=0

```

Figure 120. SELCOPYi - Browse Output File.

## Specifying brackets in the FILTER expression.

Multiple **AND/OR** conditions may be defined through the filter definition panel, but complex bracketed expressions may only be specified by manually modifying the FCOPY command generated by the panel.

For example, to select records based on the following complex filter criteria:

```
where position 1 = '3'
and
(   record contains "BLUES"           anywhere
  or record contains "ROCK 'N' ROLL"  anywhere
  or record contains "SOUL"           anywhere
)
```

- Update the *Output File*:
  - ◆ Type **userpfx.SELCTRN.ZZST2DAT.ESDS3** in the *DSN/Path* field.
- Press **F6** (FILTER) to enter the filter definition panel.
- Type in the conditions as depicted in the following screen shot.

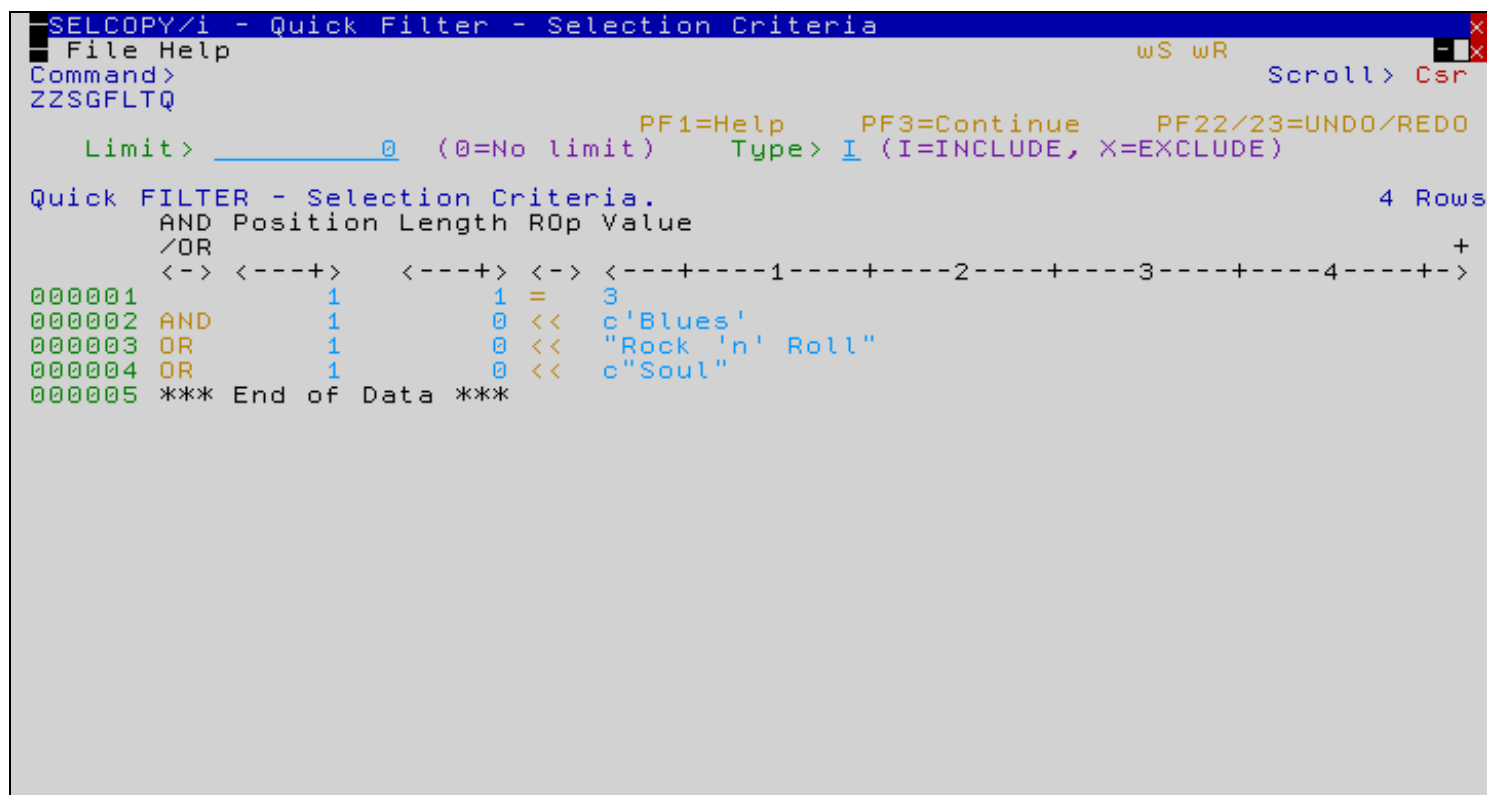


Figure 121. SELCOPYi - Filter: Multiple Selection Criteria.

## Generate FCOPY primary command

Press **F3** to return to the File Copy panel, then select item **Command** from the top menu bar.

You will be prompted once again to define your new output file (you should use the **previous sample** as the model dataset), following which the generated FCOPY primary command will be displayed in a text edit window (in a format suitable for point-and-shoot execution using the **ACTION**) key, which by default is **F16** (Shift-F4).

```
SELCOPY/i - USER123.SELCOPYI.SQL.D2013023.T1509371.CMX      80 F SEQ      Size=17
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> <---+---1---+---2---+---3---+---4---+---5---+---6---+---7--->
000001 < sd FCOPY
000002 (
000003 'USER123.SELCTRN.ZZST2DAT '
000004 )
000005 USER123.SELCTRN.ZZST2DAT.ESDS3
000006
000007 filter
000008 (
000009 include record
000010 where (
000011     substr(record, 1 , 1 ) = 3
000012     and substr(record, 1 ) << c'Blues'
000013     or  substr(record, 1 ) << "Rock 'n' Roll"
000014     or  substr(record, 1 ) << c"Soul"
000015 )
000016 )
000017 |||||
000018 * * * End of File * * *
```

Te | Line=1 | Col=1 | Alt=0,0;0 | Size=17 | Recl=80 | Fmt=F | Files=2 | Views=2

Figure 122. SELCOPYi - Generated Command.

## Modify/Execute Generated FCOPY primary command

Brackets may now be added to the filter expression as required.

Although the filter expression is fairly free format, care must be taken to maintain a **backslash (\)** character in the right-most position of any newly added lines (the backslash character indicates that the command is continued on the following line). The recommended approach would be to replicate, then modify existing lines rather than to insert new ones.

The modified FCOPY command may then be executed simply by placing your cursor on the first line of the command (beginning with the **less-than (<)** sign), then pressing the **ACTION** key, which by default is **F16** (Shift-F4).

You may also want to consider copying the generated command into your **HOME file**, saving it there for future repeat executions.

```

SELCOPY/i - USER123.SELCOPYI.SQL.D2013023.T1509371.CMX 80 F SEQ Size=19x
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
<----+----1----+----2----+----3----+----4----+----5----+----6----+----7--
000001 < sd FCOPY
000002 (
000003 'USER123.SELCTRN.ZZST2DAT '
000004 )
000005
000006 USER123.SELCTRN.ZZST2DAT.ESDS3
000007
000008 filter
000009 (
000010 include record
000011 where ( substr(record, 1 , 1 ) = 3
000012 and
000013 ( substr(record, 1 ) << c'Blues'
000014 or substr(record, 1 ) << "Rock 'n' Roll"
000015 or substr(record, 1 ) << c"Soul"
000016 )
000017 )
000018 )
000019 ||||| End of File |||||
000020 * * * End of File * * *

Te | Line=1 | Col=1 | Alt=4,4;4 | Size=19 | Recl=80 | Fmt=F | Files=2 | Views=2

```

Figure 123. SELCOPYi - Modified Command.



## Browse Output from Generated Command Window

You may wish to browse your output file before exiting (and discarding precious changes to) your generated FCOPY command. One handy way to do this is to:

1. Type the command **DSN B** on the command line (but do not press ENTER).
2. Place your cursor on the name of the dataset that you wish to browse, within the generated FCOPY command.
3. Press **ENTER**.

Alternatively, type the command **DSN** (without the **B**rowse option) to get a drop-down list of available utility functions including edit, delete and rename.

```

SELCOPY/i - Browse USER123.SELCTRN.ZZST2DAT.ESDS3      268 V ESDS
File Edit Actions Options Utilities Window SwapList Help  wS wR      Scroll> Csr
Command>
00000000      *** Top of Data ***
Record type: UnMapped      Variable(0,268) Offset=0 Data elements=1
      Length UnMapped
<---+-----1-----+-----2-----+-----3-----+-----4-----+-----5-----+-----6-----
00000001      268 37CB7FD20ADBE19AD00E211GBourgeoisie Blues
00000002      268 3079FF06C1501FB9600D797IRoman Wall Blues
00000003      268 31ED550900D5C62FD00A433GIt's A Long Way To The Top (If You Wann
00000004      268 306A9FB72A6AE79C100B433IRock 'n' Roll Singer
00000005      268 35524E0900D7B3C7900E143GSoul Stripper
00000006      268 33A2C9735E5A7641800A437IRock 'N' Roll Damnation
00000007      268 30EED324BEE2DD30100B438ADown Payment Blues
00000008      268 3924DD5148CDEF39F00H421ESubterranean Homesick Blues
00000009      268 32AF08B93888AEE8700F303AEveryday I Have the Blues (Live)
00000010      268 3DE36E78FD678857800C340ASoulmate
00000011      268 347E5BE872D4779C900D175ESoulmate
00000012      268 3FD4B86E2C95D53CF00H369AGus's Blues (Intro)
00000013      268 30C9E4EB0FF13BF8800B370CKilling the Blues
00000014      268 39D4FF395C75680EA00C189ARunaway Train
00000015      268 3988EE8137A14CDE000C382ILife and Soul
00000016      268 3A02159C78BD2DB0800A428IHey, Soul Sister
00000017      268 3EF3024088704CFF500C405GWalking In the Shadow of the Blues
00000018      *** End of Data ***

Se | Line=0 | Col=1 | Alt=0,0;0 | Size=17 | Recl=268 | Fmt=V | Files=1 | Views=

```

Figure 124. SELCOPYi - Browse Filtered Output File.

## Reformat

The **FCOPY** utility may also be used to reformat records as they are copied to the output file.

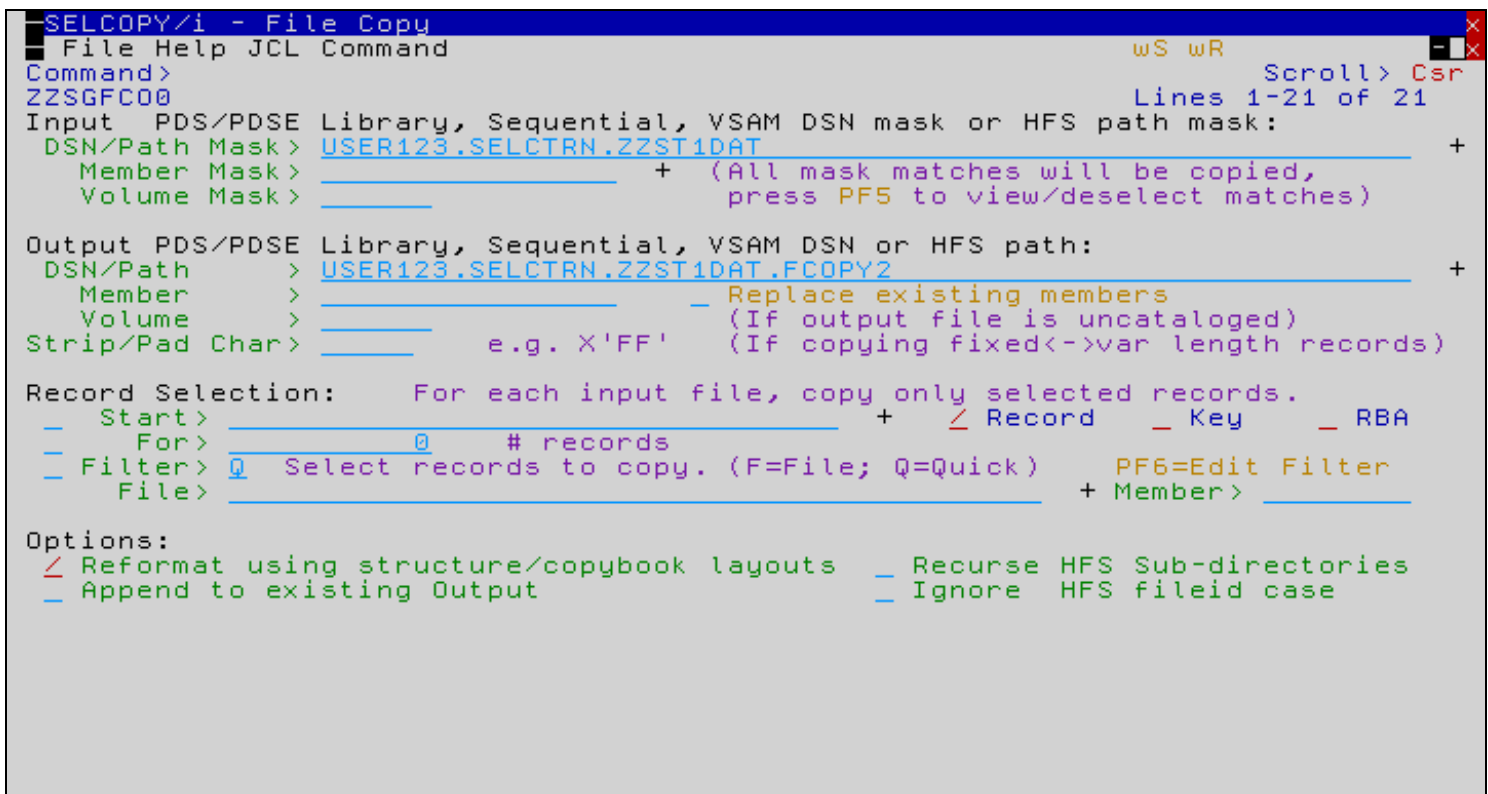
Reformat requires use of two, similar but not identical, structures that define the layout of the input and output records, with each output field being sourced from the corresponding input field of the same name (within the same record-type).

Input and output fields for any given record-type may (but need not necessarily) be:

- in a different order
- a different length
- a different data-type

Additionally fields may exist in either input or output without existing in the other.

- Specify the *Input File*:
  - ♦ Type **userpfx.SELCTRN.ZZST1DAT** in the *DSN/Path Mask* field, where *userpfx* is your own user prefix.
- Specify the *Output File*:
  - ♦ Type **userpfx.SELCTRN.ZZST1DAT.FCOPY2** in the *DSN/Path* field.
- Select *Reformat using structure/copybook layouts* from the **Options** section of the FCOPY panel.



```

SELCOPY/i - File Copy
File Help JCL Command
Command>
ZZSGFC00
Input PDS/PDSE Library, Sequential, VSAM DSN mask or HFS path mask:
  DSN/Path Mask> USER123.SELCTRN.ZZST1DAT
  Member Mask>
  Volume Mask>
Output PDS/PDSE Library, Sequential, VSAM DSN or HFS path:
  DSN/Path> USER123.SELCTRN.ZZST1DAT.FCOPY2
  Member>
  Volume>
Strip/Pad Char> e.g. X'FF'
Record Selection: For each input file, copy only selected records.
  Start>
  For> @ # records
  Filter> Q Select records to copy. (F=File; Q=Quick)
  File>
Options:
  / Reformat using structure/copybook layouts
  _ Append to existing Output
  _ Recurse HFS Sub-directories
  _ Ignore HFS fileid case
  
```

Figure 125. SELCOPYi - Reformat 1.

## Specify Input Copybook

- Press **ENTER** to proceed to the **File Reformat** panel.
- Specify the *Input Structure/Copybook File*:
  - ♦ Type **userpfx.SELCTRN.SAM1** in the *Dsn* field, to specify the PDS library containing the supplied COBOL/PL1 copybook. If wildcards are specified then a dataset list will be displayed from which you can make a selection.
  - ♦ Type **ZZST1CPC** in the *Member* field (for COBOL installations).  
Type **ZZST1CPP** in the *Member* field (for PL1 installations).  
If wildcards are specified then a member list will be displayed from which you can make a selection.
  - ♦ Check the *Type* option for *Cobol* or *PL1* as appropriate for your installation.
- Do **NOT** press **ENTER** yet!

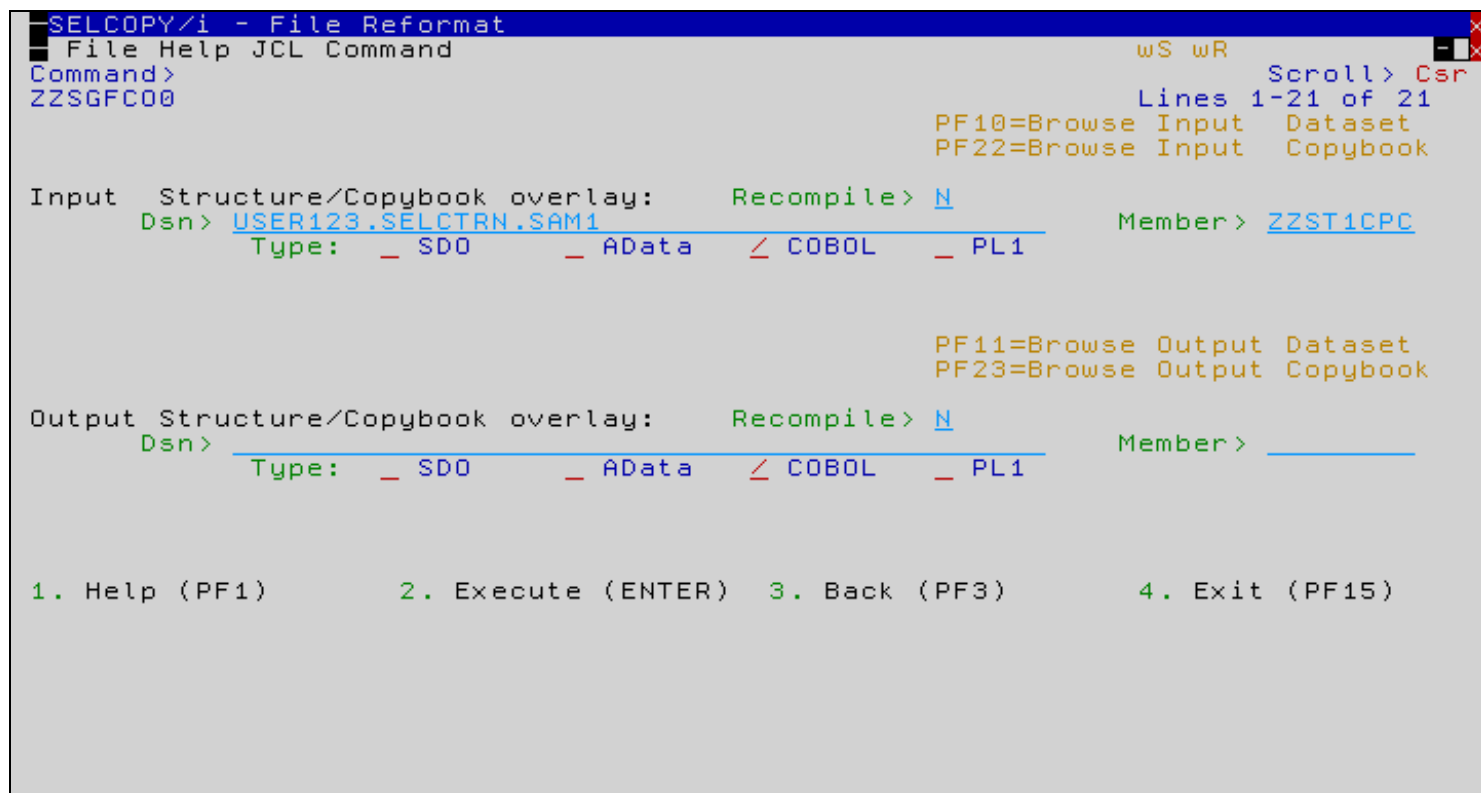


Figure 126. SELCOPYi - Input Copybook.

## Use Input Copybook as Model

We'll now create an output copybook using a selection of the fields from the input copybook, but in a different order, and with some of the fields shortened.

- Press **F22 (Shift-F10)** to browse the input copybook. You should see that it has 18 records as below (assuming COBOL installation).
- Type **GO E** to switch from browse mode to text-edit.

```

SELCOPY/i - Browse USER123.SELCTRN.SAM1(ZZST1CPC) 80 F PDS
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
Press PF4 for Utilities menu including point/shoot options
Record type: UnMapped Fixed(80) Offset=0 Data elements=1
UnMapped
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7
00000001 01 TRACK
00000002 05 PERSISTENT-ID PIC X(016).
00000003 05 TRACK-NUM PIC 9(003).
00000004 05 TRACK-ID PIC 9(004).
00000005 05 NAME PIC X(120).
00000006 05 ARTIST PIC X(070).
00000007 05 ALBUM PIC X(070).
00000008 05 TOTAL-TIME PIC 9(007) BINARY.
00000009 05 FILE-SIZE PIC 9(009) BINARY.
00000010 05 BIT-RATE PIC 9(004) BINARY.
00000011 05 SAMPLE-RATE PIC 9(005) PACKED-DECIMAL.
00000012 05 YEAR PIC 9(004).
00000013 05 NORMALIZATION PIC S9(005) PACKED-DECIMAL.
00000014 05 DISC-NUMBER PIC 9(003).
00000015 05 ALBUM-ARTIST PIC X(041).
00000016 05 RELEASE-DATE PIC X(020).
00000017 05 DATE-ADDED PIC X(020).
00000018 05 DATE-MODIFIED PIC X(020).
00000019 *** End of Data ***
Se | Line=0 | Col=1 | Alt=0,0;0 | Size=18 | Recl=80 | Fmt=F | Files=1 | Views=0

```

Figure 127. SELCOPYi - Browse Input Copybook.

## Create Output Copybook

- Move **05** field **ARTIST** following **01 TRACK**, and change **PIC X(070)** to **PIC X(020)**.
- Move **05** field **ALBUM** following **05 ARTIST**, and change **PIC X(070)** to **PIC X(024)**.
- Move **05** field **TRACK-NUM** following **05 ALBUM**.
- Move **05** field **NAME** following **05 TRACK-NUM**.
- Delete all other lines following **05 NAME**.
- Type **CREATE ZZSP1CPC** on the command line, but do NOT press ENTER.
- Make a mental note that total record length defined by the copybook is **167** (i.e. the sum of all the field lengths 20+24+3+120).
- Type **C\*** in the prefix area of line 1 of the file, then press **ENTER**. to create the new member.

```

SELCOPY/i - USER123.SELCTRN.SAM1(ZZST1CPC)      80 F PDS   Size=5   Alt=7,7;7
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> cre zzsp1cpc
      <---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000000 * * * Top of File * * *
c*      01 TRACK
000002      05 ARTIST                      PIC  X(020).
000003      05 ALBUM                      PIC  X(024).
000004      05 TRACK-NUM                  PIC  9(003).
000005      05 NAME                      PIC  X(120).
000006 * * * End of File * * *
  
```

Te | Line=0 | Col=1 | Alt=7,7;7 | Size=5 | Recl=80 | Fmt=F | Files=2 | Views=2

Figure 128. SELCOPYi - Create Output Copybook.

## Specify Output Copybook

- Type **CANCEL** to discard changes to the input copybook and return to the File Reformat panel.
- Specify the *Output Structure/Copybook File*:
  - ◆ Type **userpfx.SELCTRN.SAM1** in the *Dsn* field.
  - ◆ Type **ZZSP1CPC** in the *Member* field (assuming COBOL installation).
  - ◆ Check the *Type* option for *Cobol* or *PL1* as appropriate for your installation.

```

SELCOPY/i - File Reformat
File Help JCL Command
Command>
ZZSGFC00

Input Structure/Copybook overlay:  Recompile> N
Dsn> USER123.SELCTRN.SAM1          Member> ZZST1CPC
Type:  _ SDO      _ AData    / COBOL  _ PL1

Output Structure/Copybook overlay:  Recompile> N
Dsn> USER123.SELCTRN.SAM1          Member> ZZSP1CPC
Type:  _ SDO      _ AData    / COBOL  _ PL1

1. Help (PF1)      2. Execute (ENTER)  3. Back (PF3)      4. Exit (PF15)
  
```

Figure 129. SELCOPYi - Specify Output Copybook.

## Execute Reformat

- Press **ENTER** to execute the reformat.
- You will be prompted to create you new output file, which should be allocated with **record length 167 (fixed) (and block size 0 )**.
- A summary message will be displayed on completion.
- Press **F20 (Shift-F8)** to browse the output file in formatted mode.

```

SELCOPY/i - Browse USER123.SELCTRN.ZZST1DAT.FCOPY2 using USER123.SAM1x
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Use CHAR/MAP/VFMT/UNFMT to switch view mode.      Press PF4 for Utilities menu.
Record type: TRACK   Fixed(167) Offset=0 Data elements=5

```

ARTIST #2	ALBUM #3	TRACK-NUM #4	NAME #5
AN 1:20	AN 21:24	ZD 45:3	AN 48:120
<---+---1---+--->	<---+---1---+---2--->	<->	<---+---1--->
00000001 Adele	21	1	Rolling In the
00000002 Adele	21	2	Rumour Has It
00000003 Adele	21	3	Turning Tables
00000004 Adele	21	4	Don't You Reme
00000005 Adele	21	5	Set Fire to th
00000006 Adele	21	6	He Won't Go
00000007 Adele	21	7	Take It All
00000008 Adele	21	8	I'll Be Waitin
00000009 Adele	21	9	One and Only
00000010 Adele	21	10	Lovesong
00000011 Adele	21	11	Someone Like Y
00000012 Adele	21	12	I Found a Boy
00000013 Adele	21	13	Adele 21 - A T
00000014 Alabama Shakes	Boys &#38; Girls	1	Hold On
00000015 Alabama Shakes	Boys &#38; Girls	2	I Found You
00000016 Alabama Shakes	Boys &#38; Girls	3	Hang Loose
00000017 Alabama Shakes	Boys &#38; Girls	4	Rise to the Su
00000018 Alabama Shakes	Boys &#38; Girls	5	You Ain't Alon
00000019 Alabama Shakes	Boys &#38; Girls	6	Goin' to the P
00000020 Alabama Shakes	Boys &#38; Girls	7	Heartbreaker
00000021 Alabama Shakes	Boys &#38; Girls	8	Boys &#38; Gir
00000022 Alabama Shakes	Boys &#38; Girls	9	Be Mine

```

Se | Line=0 | Col=1 | Alt=0,0,0 | Size>334 | Recl=167 | Fmt=F | Files=1 | Views

```

Figure 130. SELCOPYi - Browse Formatted Output.

## Updating the Output Copybook (1)

- Press **F3** to return to the File Reformat panel.
- Press **F23 (Shift-F11)** to browse the output copybook.
- Type **GO E** to switch from browse mode to text-edit.

```

SELCOPY/i - Browse USER123.SELCTRN.SAM1(ZZSP1CPC)      80 F PDS
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> go e                                         Scroll> Csr
Press PF4 for Utilities menu including point/shoot options
Record type: UnMapped   Fixed(80) Offset=0 Data elements=1
      UnMapped
      <---+---1---+---2---+---3---+---4---+---5---+---6---+---7
00000001      01 TRACK
00000002      05 ARTIST                      PIC X(020).
00000003      05 ALBUM                      PIC X(024).
00000004      05 TRACK-NUM                  PIC 9(003).
00000005      05 NAME                      PIC X(120).
00000006 *** End of Data ***
  
```

Se | Line=0 | Col=1 | Alt=0,0;0 | Size=5 | Recl=80 | Fmt=F | Files=1 | Views=0

Figure 131. SELCOPYi - Browse Output Copybook.



## Updating the Output Copybook (2)

- Update 05 field **ARTIST** changing **PIC X(020)** to **PIC X(010)**.
- Update 05 field **ALBUM** changing **PIC X(024)** to **PIC X(010)**.
- Update 05 field **NAME** changing **PIC X(120)** to **PIC X(050)**.
- Make a mental note that total record length defined by the copybook is now **73** (i.e. the sum of all the field lengths 10+10+3+50).
- Press **F3** and save your changes before returning to the File Reformat panel.

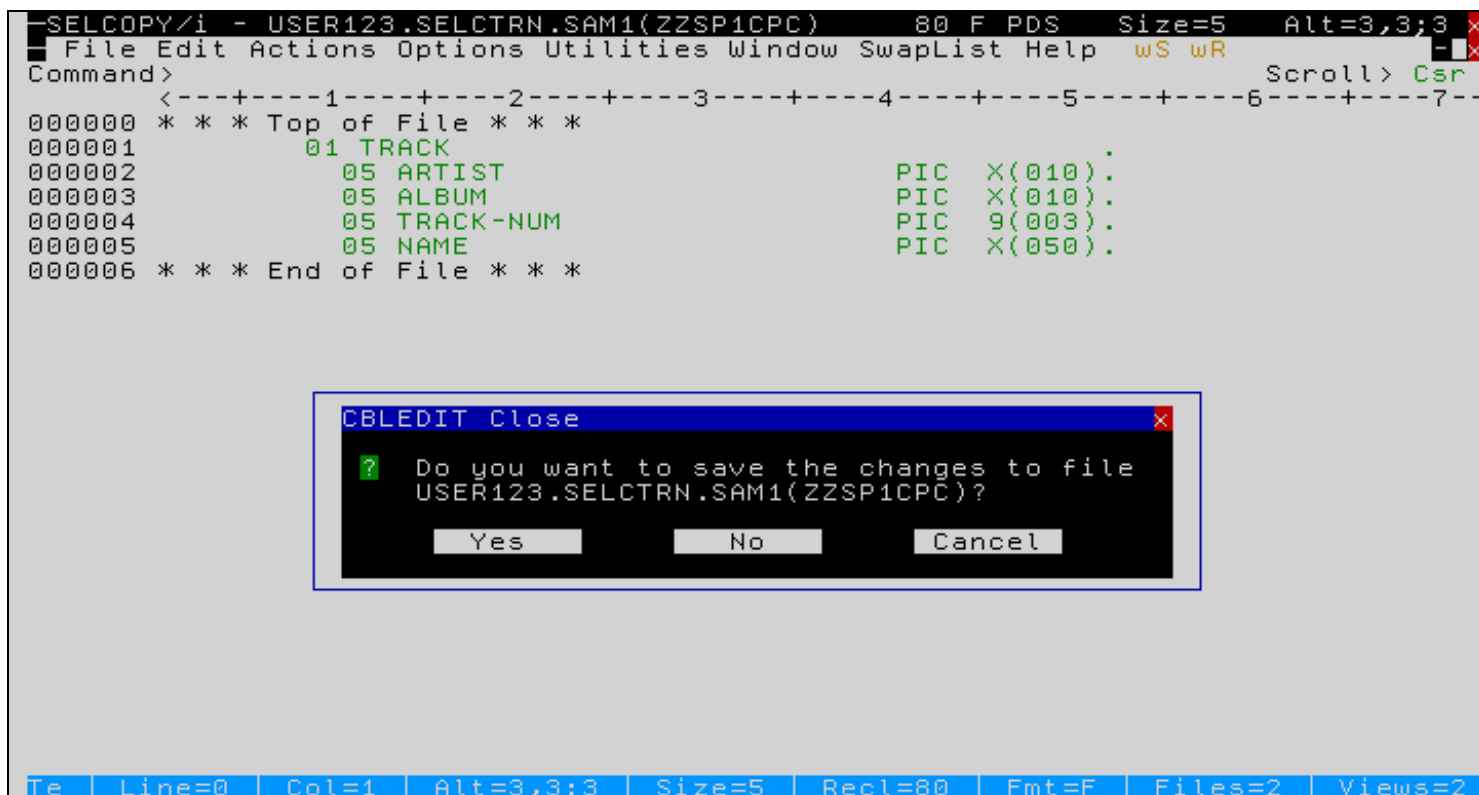


Figure 132. SELCOPYi - Update Output Copybook.

## Force Recompile of Updated Output Copybook (1)

If your structure/copybook file-id refers to a COBOL, PL1 or ADATA source file (not an SDO) then a compile step must be performed in order to turn the source copybook into SELCOPYi's own internal structure (SDO) format.

A temporary SDO will be created, lasting the duration of the SELCOPYi session, making subsequent reference to the same copybook during the session much faster by bypassing the compile stage.

If, however as in our case, the output copybook (or any of its included components) should be modified during the session, then a recompile of the source will normally be required.

For performance reasons **Recompile> N** (meaning no recompile should occur) is the default.

Specify **Recompile> Y** to force a copybook recompile each time the reformat process is executed.

Alternatively type the primary command:

```
SD DROP copybook_name
```

- Enter **Y** in the **Recompile** field for the Output Copybook.
- Press **ENTER** to repeat the reformat, using the updated copybook.

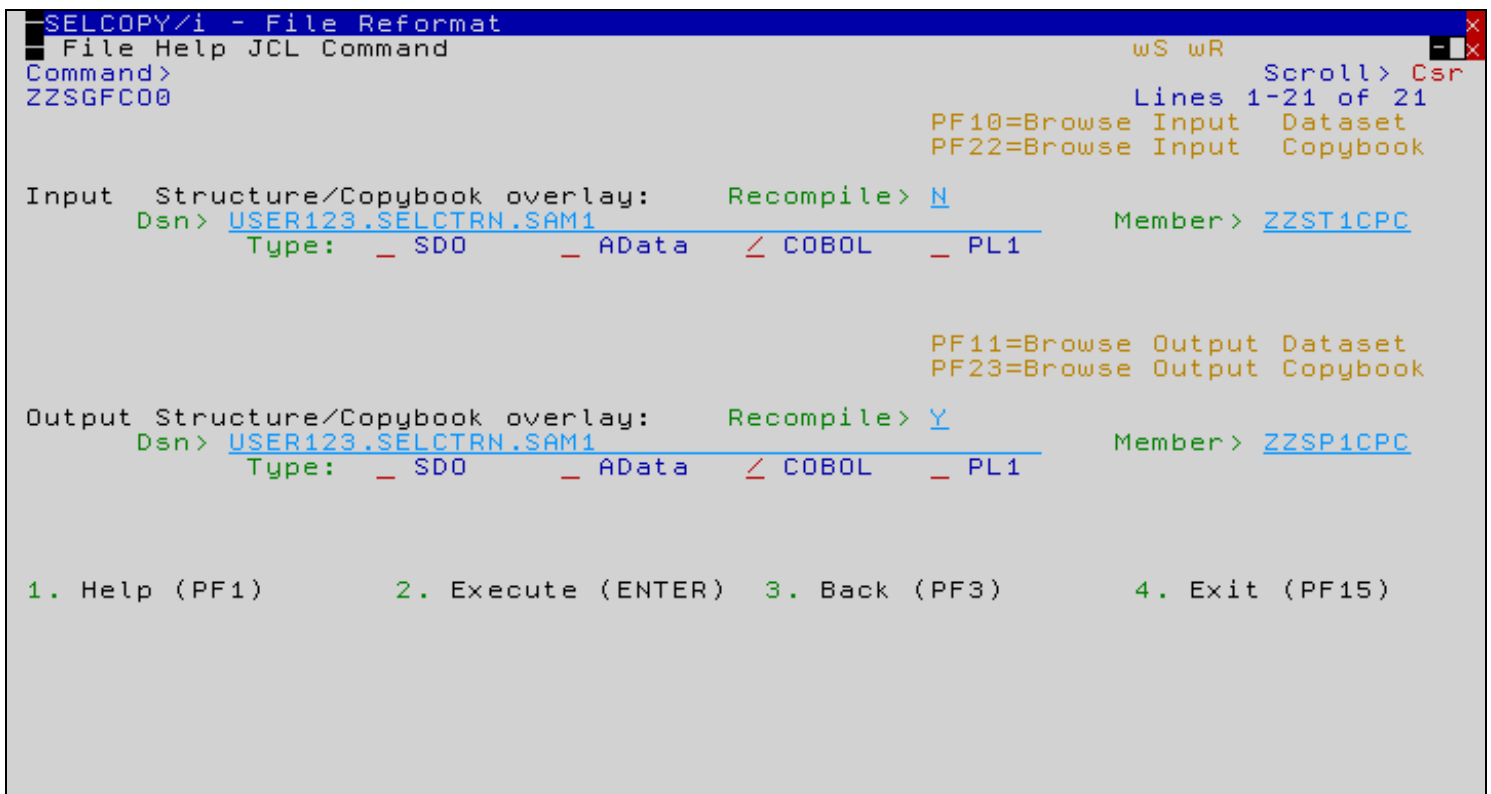


Figure 133. SELCOPYi - Recompile=YES.

## Force Recompile of Updated Output Copybook (2)

- Press **F20 (Shift-F8)** to browse the output file in formatted mode.
- Note that the **=LGTH>** flag appears in the prefix area for each record. This is expected, alerting you that the output record (the original fixed length=167) does not match the new version of the mapped record-type (length=73).

```

SELCOPY/i - Browse USER123.SELCTRN.ZZST1DAT.FCOPY2 using USER123.SELCTRN.SAM1
File Edit Actions Options Utilities Window SwapList Help  WS WR  Scroll> Csr
Command>
Use CHAR/MAP/VFMT/UNFMT to switch view mode.      Press PF4 for Utilities menu.
Record type: TRACK      Fixed(73) Offset=0 Data elements=5
      ARTIST      ALBUM      TRACK-NUM  NAME
      #2          #3          #4 #5
      AN 1:10     AN 11:10     ZD 21:3  AN 24:50
      <---+-----> <---+-----> <-> <---+-----1-----+-----2-----+-----3-----+-----
=LGTH> Adele      21          1 Rolling In the Deep
=LGTH> Adele      21          2 Rumour Has It
=LGTH> Adele      21          3 Turning Tables
=LGTH> Adele      21          4 Don't You Remember
=LGTH> Adele      21          5 Set Fire to the Rain
=LGTH> Adele      21          6 He Won't Go
=LGTH> Adele      21          7 Take It All
=LGTH> Adele      21          8 I'll Be Waiting
=LGTH> Adele      21          9 One and Only
=LGTH> Adele      21          10 Lovesong
=LGTH> Adele      21          11 Someone Like You
=LGTH> Adele      21          12 I Found a Boy (Bonus Track)
=LGTH> Adele      21          13 Adele 21 - A Track By Track Interview
=LGTH> Alabama Sh Boys &#38; 1 Hold On
=LGTH> Alabama Sh Boys &#38; 2 I Found You
=LGTH> Alabama Sh Boys &#38; 3 Hang Loose
=LGTH> Alabama Sh Boys &#38; 4 Rise to the Sun
=LGTH> Alabama Sh Boys &#38; 5 You Ain't Alone
=LGTH> Alabama Sh Boys &#38; 6 Goin' to the Party
=LGTH> Alabama Sh Boys &#38; 7 Heartbreaker
=LGTH> Alabama Sh Boys &#38; 8 Boys &#38; Girls
=LGTH> Alabama Sh Boys &#38; 9 Be Mine
Se | Line=0 | Col=1 | Alt=0,0;0 | Size>334 | Recl=167 | Fmt=F | Files=1 | Views

```

Figure 134. SELCOPYi - Browse Formatted Output 2.

## Running File Copy/Reformat in Batch

- The File Copy/Reformat utility may also be run in batch, by selecting JCL from the panel menu bar.
- After typing the **SUB** primary command to submit the generated JCL deck, you will have the option to allow SELCOPYi to automatically guide you into SDSF (starting a new ISPF split screen) in order to view the output.

```

SELCOPY/i - USER123.SELCOPYI.SQL.D2013023.T1615254.JCL      80 F SEQ      Size=22x
File Edit Actions Options Utilities Window SwapList Help  wS wR      Scroll> Csr
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001 //USER123S  JOB  ,,CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=&SYSUID
000002 /**
000003 /** SELCOPY/i 3.2B (C)2012 Compute(Bridgend) Ltd UK +44(1656)652222
000004 /**      JCL for: ZZSGFC00 SDE FCOPY Basic File Copy.
000005 /** Created by: USER123  2013/01/23 16:15:25
000006 /**
000007 //SELC0001 EXEC PGM=SDEAMAIN,REGION=0M
000008 //STEPLIB DD DISP=SHR,DSN=CBL.CBLI320.EXE
000009 // DD DISP=SHR,DSN=CBL.CBLI310.EXE
000010 //ZZSUSERI DD DISP=SHR,DSN=USER123.CBLI.INI
000011 //SDEPRINT DD SYSOUT=*
000012 //SDEIN DD *
000013 FCOPY
000014 (
000015     'USER123.SELCTRN.ZZST1DAT '
000016 )
000017     using cobol USER123.SELCTRN.SAM1(ZZST1CPC)
000018
000019     USER123.SELCTRN.ZZST1DAT.FCOPY2
000020     using cobol USER123.SELCTRN.SAM1(ZZSP1CPC)
000021
000022 /**
000023 * * * End of File * * *

```

Te | Line=1 | Col=1 | Alt=0,0;0 | Size=22 | Recl=80 | Fmt=F | Files=2 | Views=2

Figure 135. SELCOPYi - Generated Batch Job.

## Option 6 - File Search/Update/Copy/Reformat (FSU)

---

The File Search/Update/Copy/Reformat utility allows you to:

- Globally search and optionally update multiple sequential, PDS/PDSE, GDG, HFS and/or VSAM data sets.
- Restrict PDS/PDSE library search/update/copy:
  - ◆ to members with names that match a member name mask
  - ◆ to members satisfying directory element selection criteria  
e.g. select on timestamp, size, userid etc or any combination.
  - ◆ to members selected by one or more previous searches.
- Specify an output file to which **all** input records will be copied regardless of whether record data has been changed.
- Apply a filter in order to restrict search/update/copy to records matching specific selection criteria.
- Search and optionally update uncataloged data sets by generic volume id.
- Specify the start record for search/update/copy operations.
- Restrict the number of records read for search/update/copy operations.
- Restrict the search/update operation to specific columns within the file records.
- Apply a **structure** (copybook) overlay to format **input** file records.
- Optionally restrict search/update to records assigned to specific record types, and specific fields within those record-types.
- For **Formatted File Search/Update**, optionally specify an output file **and** output structure (copybook) to reformat input record fields (i.e. alter field data type, re-order and/or delete fields).
- Update character data using different length search and update CHANGE strings.
- Control use of blank padding or blank absorption when character search and update CHANGE strings are of different length. Note that the CHANGE operation will fail if the length of the updated record is greater than the file's maximum record length.

Following File Search/Update/Copy/Remap execution, report output is generated in a structured format suitable for presentation to the user in an SDE window view.

During execution, a progress window is displayed which allows the user to interrupt processing at any point using the **Attention key**.

## The File Search/Update (FSU) Panel

The FSU panel may be started using any of the following methods:

- Select option **6** from the **SELCOPYi** Primary Option Menu (=).
- At any primary command prompt type **=6**.
- At any primary command prompt type **FSU**.
- From any dataset, library or HFS path list window, use the **F** line-command.

### Searching a PDS/PDSE Library

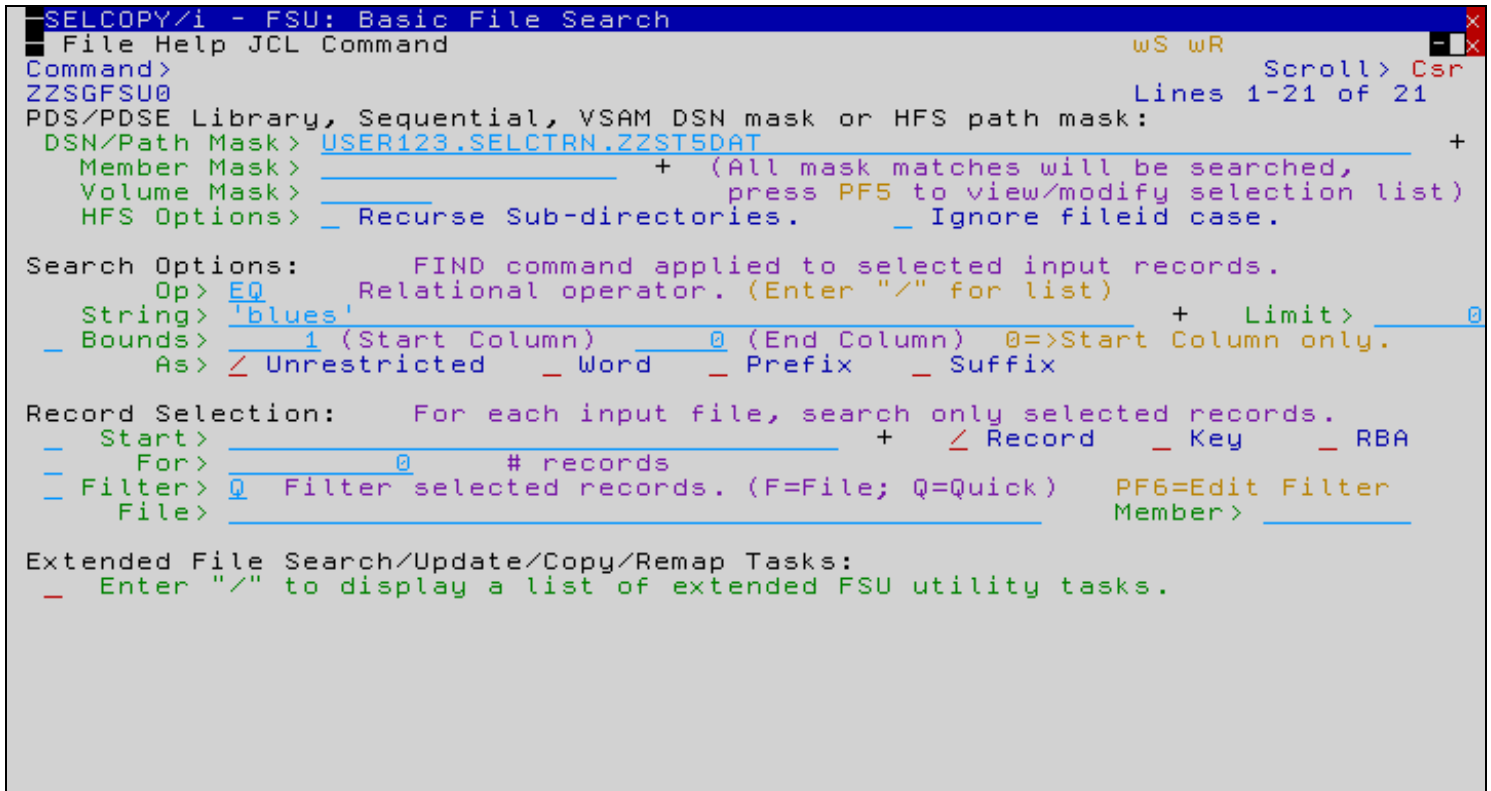


Figure 136. FSU - File Search/Update (FSU) Panel (=5)

To follow the demonstration use the panel to search the supplied sample library for a the character string **"blues"** (case-insensitive).

- Specify the *Input Library*:
  - ◆ Type **userpfx.SELCTRN.ZZST5DAT** in the *DSN/Path Mask* field, where *userpfx* is your own user prefix.
  - ◆ The *Member Mask* field may be left blank in order to search all members of the input library. Alternatively type "" or a member mask of your choice.
  - ◆ The *Volume Mask* should be left blank in this case, otherwise the input dataset list will be restricted to files residing on matching volumes only.
- Specify the *Search Options*:
  - ◆ Enter **EQ** in the *Relational Operator (Op)* field.
  - ◆ Type **blues** in the *String* field.
    - ◇ For simple case-insensitive character strings there is no need to add quotes (this will be done automatically).
    - ◇ You may specify the string using **C'ABCD'** notation if case-sensitivity is required.
    - ◇ Hex strings may be specified using **X'1234'** notation.
  - ◆ Enter **0** in the *Limit* field in order to display **all hits** in each member. Alternatively, enter **1** to display the first hit only.
- Press **ENTER** to run the search. For operations lasting more than a second, a progress window will be displayed with the report in the background, (continually updating at one second intervals).
- Long running processes may be interrupted by pressing the **Attention key**.

## Search Report Output (Standard 80-column Screen Width)

Following execution, the structured report output file is displayed as a formatted table view, with search matches displayed under the heading:

### Record type: Hit

- The first record (**Record type: Command**) displays the following fields:

Field	Description
Timestamp	The date/time of execution.
Command	The FSU primary command generated by the panel.

- The second record (**Record type: Summary**) among other fields displays the following:

Field	Description
RecordsTot	The number of records processed.
FilesTot	The number of files/members processed.
Hits	The number of occurrences of the search value encountered.
RecordsHit	The number of records encountered with at least once occurrence of the search value.
FilesHit	The number of files/members encountered with at least once occurrence of the search value.

- For library searches on standard 80-column screens, view of the **Hit** records is restricted to two columns:

Field	Description
zMember	The name of the hit library member. zMember is a <b>held field</b> , meaning it will remain visible when the display is scrolled right.
zRecord	The contents of the hit record.

```

SELCPY/i - Edit  USER123.SELCFSU.T103716.RPT using USER123.SELCFSU.T103716.
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
Record type: Command  Fixed(315) Offset=0 Data elements=4
Timestamp      Command
<---+---1---+---> <---+---1---+---2---+---3---+---4---+---5---+---
2013/02/25 10:37:16 FSU input ( 'USER123.SELCTR.N.ZZST5DAT ( TRACK001 TRACK002 T

Record type: Summary  Variable(51,52) Offset=0 Data elements=14
RunType  RecordsTot  FilesTot  Hits  RecordsHit  FilesHit  RemapErrs
<---+---> <---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
FIND      1070      25      8      8      6      0

Record type: Hit  Variable(47,454) Offset=0 Data elements=13
zMember  zRecord
<---+---> <---+---1---+---2---+---3---+---4---+---5---+---6---+---7
TRACK002 0EED324BEE2DD30100B438ADown Payment Blues
TRACK002 0C9E4EB0FF13BF8800B370CKilling the Blues
TRACK003 EF3024088704CFF500C405GWalking In the Shadow of the Blues
TRACK004 079FF06C1501FB9600D797IRoman Wall Blues
TRACK005 7CB7FD20ADBE19AD00E211GBourgeoisie Blues
TRACK006 2AF08B93888AEE8700F303AEeveryday I Have the Blues (Live)
TRACK008 924DD5148CDEF39F00H421ESubterranean Homesick Blues
TRACK008 FD4B86E2C95D53CF00H369AGus's Blues (Intro)
*** End of Data ***

---- Press PF1 for Help, PF6 to edit file at cursor line ----
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=10 | Recl=454 | Fmt=V | Files=1 | Views=

```

Figure 137. FSU - Search Report

## Displaying Additional Hit Information Fields

To view additional information fields that are normally suppressed from view on a narrow screen, place the cursor on the hit record of interest then press the ZOOMW key, **F17 (Shift-F5)**.

The chosen hit record will be displayed individually, in a separate **single-record (zoomed) format** window with the following additional fields made visible.

Field	Description
zDsn	The library dataset name.
zRecNo	The hit record number.
zHitNo	The hit record number within the file/member.
zLrecl	The logical record length of the hit record.
zHits	The number search value occurrences within this hit record.

Press **F3** to return to the table view.

```

SELCPY/i - Edit  USER123.SELCFSU.T103716.RPT:2 using USER123.SELCFSU.T103716
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command>
Record type: Hit  Variable(47,454) Offset=0 Data elements=13
Record> 00000009  Flags: f          Length: 454

Field          <---+---1---+---2---+---3---+---4---+---5---+---6
3 zDsn         USER123.SELCTRN.ZZST5DAT
3 zMember      TRACK008
3 zRecNo       14
3 zHitNo       1
3 zLrecl       407
3 zHits        1
3 zRecord      924DD5148CDEF39F00H421ESubterranean Homesick Blues
61 - 120
121 - 180
181 - 240
241 - 300
301 - 360
361 - 407
          Bob Dylan
          The Essential Bob Dylan
          C b 200f
          A@@@ABob Dylan
          2000-10-31T00
          :00:00Z2012-08-02T14:08:36Z2012-08-02T14:13:20Z

---- Press PF1 for Help, PF6 to edit file at cursor line ----
Se | Line=9 | Col=1 | Alt=0,0;0 | Size=10 | Recl=454 | Fmt=V | Files=1 | Views=

```

Figure 138. FSU - Search Report (Zoomed)



## Using F6 to edit the Hit File/Record

From the report table-view, you may place your cursor on any **Hit** record, then press **F6** to edit the hit file. The edit view will be automatically scrolled in order to place the hit record at the top of the screen.

This feature may be adjusted using the **Settings->List (=0.5)** panel to select the required action:

Option	Action
Edit	Text Editor (Edit)
View	Text Editor (Read-only)
Browse	Data Editor (read-only)
SDE	Data Editor (Full Edit)
SDEU	Data Editor (Update-in-place)
None	No Action

The screen below shows the display after pressing **F6** from the table view with the cursor on the first hit from member **TRACK008**

```

SELFCOPY/i - USER123.SELCTRN.ZZST5DAT(TRACK008) 407 F PDSE Size=76 AltX
File Edit Actions Options Utilities Window SwapList Help wS wR
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000014 924DD5148CDEF39F00H421ESubterranean Homesick Blues
000015 A5DCEE01334C978100H427ANot Dark Yet
000016 77122BAF414692C100H218EI Wish I Were Blind
000017 581F8F3BFE2255DA00H222EDry Lightning
000018 4BA23CA33D44938000H224IThe Brokenhearted
000019 12B8896F463EF68500H229ELoose Change
000020 021F64833305EB3300H232EMy Oklahoma Home
000021 B7108A3D38675A3600H238IBlinded By the Light
000022 DCE8E9AC177C5D5200H236CIf I Should Fall Behind
000023 705E6B8E80D761F400H240IThe Long Division
000024 10F86F5F12AAF76200H243CLoving Me 4 Me
000025 809FD6E1ECC0AD5F00H247EWarning Sign
000026 1E4259709E7E552400H415EHow Does a Duck Know?
000027 2E37AC8F0FED003200H278ETransformation
000028 0A6FBD6949EB62DF00H280IJanuary Rain
000029 E172577B0D0EF8D400H283ASilver Lining
000030 46CD09047022D8A200H286ACrashing Down
000031 87020728ED2F19BC00H288EEmpty
000032 FC844197CA33747100H291EDelayed Devotion
000033 8232305C8FBBF92700H293GI Want The World
000034 0BA50B44B05165DB00H296GBetween Two Lungs
000035 9F4E3EF9F63B3C5E00H413AOne of the Boys
000036 2AFD30D86BE2862B00H299IScraped
000037 4BC6E5B1677D896600H303EWho Did You Think I Was (Live)
000038 5713F8AAF2422ADB00H307GBetween a Laugh and a Tear
000039 230FFC80DC91F5CA00H310ADead or Alive
000040 254664C17E6213F600H312IBack Talk
Te | Line=14 | Col=1 | Alt=0,0;0 | Size=76 | Recl=407 | Fmt=F | Files=2 | Views

```

Figure 139. FSU - Edit Hit Member

## Adjusting Report Table View

If you wish to display suppressed fields while in table view, you may use the **SELECT** primary command as depicted below.

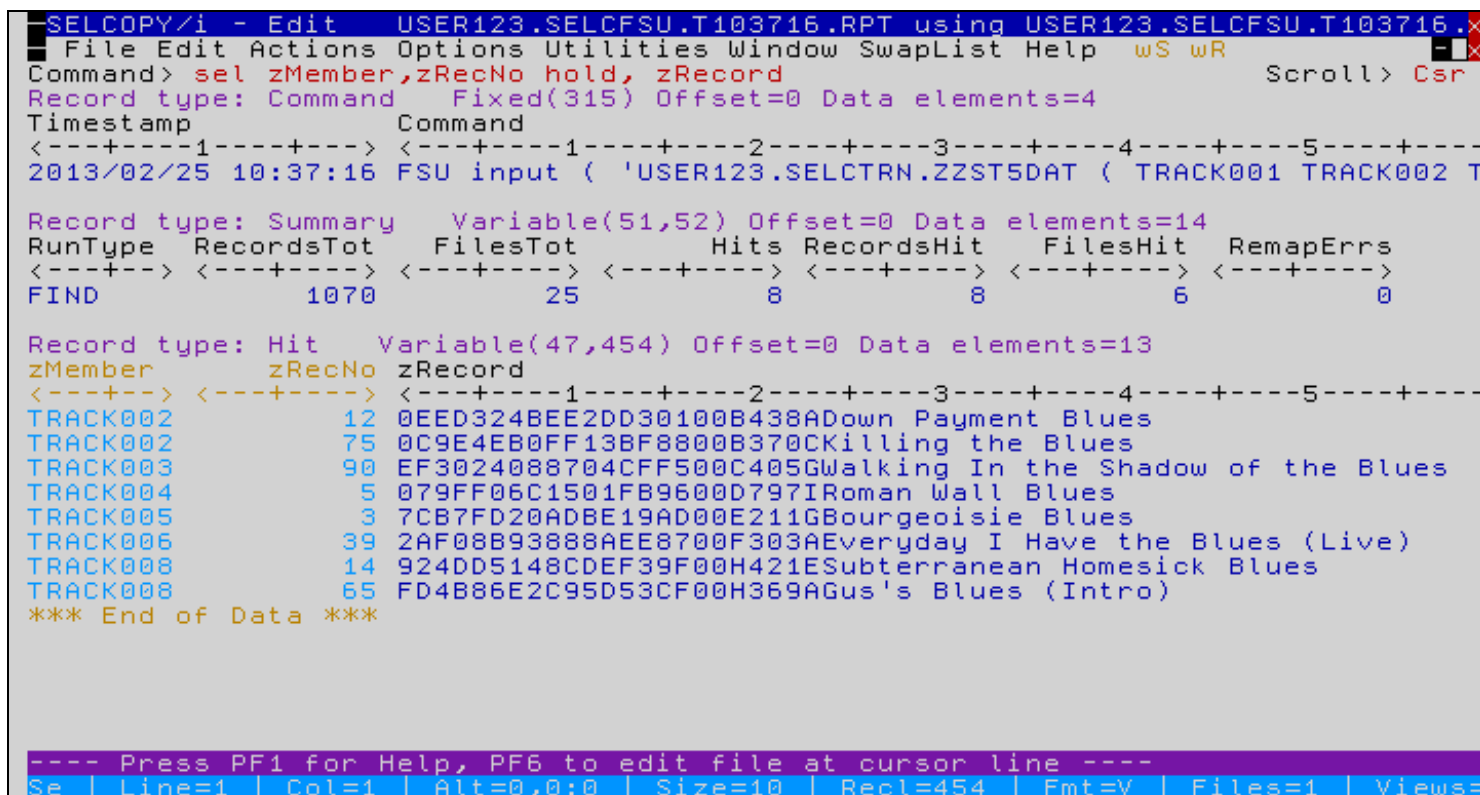
Note that, by default, the **SELECT** command operates on the **focus record-type** (i.e. the record at the top of the screen, or at the cursor if it is placed in the file-area).

To avoid this complication add **"FROM HIT"** to your usual **SELECT** primary command. e.g.

```
select zMember,zRecNo hold, zRecord from Hit
```

Enter the **SELECT (SEL)** primary command without parameters to adjust your visible columns using an interactive dialog panel.

Alternatively, the **SEL** line-command may entered into the prefix area of any record. Although the prefix area is normally suppressed when the report is being displayed on a standard 80-column screen width, you may enter the primary command **PREFIX ON** to re-show it.



```

SELCPY/i - Edit  USER123.SELCFSU.T103716.RPT using USER123.SELCFSU.T103716.x
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> sel zMember,zRecNo hold, zRecord                               Scroll> Csr
Record type: Command  Fixed(315) Offset=0 Data elements=4
Timestamp            Command
<---+---1---+---> <---+---1---+---2---+---3---+---4---+---5---+---
2013/02/25 10:37:16 FSU input ( 'USER123.SELCTRN.ZZST5DAT ( TRACK001 TRACK002 T

Record type: Summary  Variable(51,52) Offset=0 Data elements=14
RunType  RecordsTot  FilesTot  Hits  RecordsHit  FilesHit  RemapErrs
<---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
FIND          1070         25         8         8         6         0

Record type: Hit  Variable(47,454) Offset=0 Data elements=13
zMember      zRecNo  zRecord
<---+---> <---+---> <---+---1---+---2---+---3---+---4---+---5---+---
TRACK002         12  0EED324BEE2DD30100B438ADown Payment Blues
TRACK002         75  0C9E4EB0FF13BF8800B370CKilling the Blues
TRACK003         90  EF3024088704CFF500C405GWalking In the Shadow of the Blues
TRACK004          5  079FF06C1501FB9600D797IRoman Wall Blues
TRACK005          3  7CB7FD20ADBE19AD00E211GBourgeoisie Blues
TRACK006         39  2AF08B93888AEE8700F303AEeveryday I Have the Blues (Live)
TRACK008         14  924DD5148CDEF39F00H421ESubterranean Homesick Blues
TRACK008         65  FD4B86E2C95D53CF00H369AGus's Blues (Intro)
*** End of Data ***

---- Press PF1 for Help, PF6 to edit file at cursor line ----
Se | Line=1 | Col=1 | Alt=0,0;0 | Size=10 | Recl=454 | Fmt=V | Files=1 | Views=

```

Figure 140. FSU - Report with Tailored SELECT

## Selecting Library Members for Search/Update

At the Search/Update front panel, if input refers to a library and the **Member Mask** field is either left blank, or includes wildcard characters, then by default **all** member mask matches will be processed, without the need to confirm via a member selection list.

However, you may press the SELECT key **F5** to access the member selection list, when required.

Manual selection for individual members is made by adding/removing "S" in the **Sel** column.

Initially all members matching the mask will be selected, but this may be toggled using the **F5 (Select)** and **F6 (Deselect)** keys once the list is displayed.

**SELCOPY/i - Select Input Members**

File Edit Actions Options Utilities Window SwapList Help wS wR

Command> Scroll> Csr

ZZSGFSU2

Select members to be included. F5=Select All, F6=Deselect All

Library DSN: USER123.SELCTRN.ZZST5DAT

Member Mask>

Use primary commands FIND, ALL/MORE/LESS to condense member list. 25 Rows

Sel	Member	LastMod	Created	Cursize	Inisize	User	Alias	Of
-	<---+-->	<---+---1---+>	<---+--->	<---+>	<---+>	<---+-->	<---+-->	
S	TRACK001	2013/02/21 16:47	2013/02/21	98	98	USER123		0001
S	TRACK002	2013/02/21 16:47	2013/02/21	87	87	USER123		0002
S	TRACK003	2013/02/21 16:47	2013/02/21	90	90	USER123		0003
S	TRACK004	2013/02/21 16:47	2013/02/21	89	89	USER123		0004
S	TRACK005	2013/02/21 16:47	2013/02/21	80	80	USER123		0005
S	TRACK006	2013/02/21 16:47	2013/02/21	83	83	USER123		0006
S	TRACK007	2013/02/21 16:47	2013/02/21	80	80	USER123		0007
S	TRACK008	2013/02/21 16:47	2013/02/21	76	76	USER123		0008
S	TRACK009	2013/02/21 16:47	2013/02/21	77	77	USER123		0009
S	TRACK010	2013/02/21 16:47	2013/02/21	70	70	USER123		0010
S	TRACK011	2013/02/21 16:47	2013/02/21	62	62	USER123		0011
S	TRACK012	2013/02/21 16:47	2013/02/21	51	51	USER123		0012
S	TRACK013	2013/02/21 16:47	2013/02/21	34	34	USER123		0013
S	TRACK014	2013/02/21 16:47	2013/02/21	25	25	USER123		0014
S	TRACK015	2013/02/21 16:47	2013/02/21	14	14	USER123		0015
S	TRACK016	2013/02/21 16:47	2013/02/21	13	13	USER123		0016
S	TRACK017	2013/02/21 16:47	2013/02/21	10	10	USER123		0017
S	TRACK018	2013/02/21 16:47	2013/02/21	8	8	USER123		0018
S	TRACK019	2013/02/21 16:47	2013/02/21	8	8	USER123		019

F1=HELP F2=SPLIT F4=WINDOW F5=Select F6=Deselect F9=SWAP  
F12=CRETRIEV F14=EXPAND F17=ZOOM F22=UNDO F23=REDO

Figure 141. FSU - Member Selection List

## Condensing Selected Members by Timestamp/Size/Userid

Listed members will be **active in the Search/Update process** provided **both** of the following are true.

1. The list entry is **selected** ("S" in the **Sel** column).
2. The list entry is **not excluded**.

List entries may be **selected/deselected** as follows:

1. Individually, by entering or removing "S" from the **Sel** column.
2. On mass, by pressing **F5/F6**, which will select/deselect, all entries.  
Note: **Excluded** entries are not affected by pressing F5/F6.

List entries may be **included/excluded** as follows:

1. By entering "X" and other related "line-commands" into the numeric area at the right-hand side, as if working in an edit environment.
2. Using the **ALL**, **MORE** and **LESS** primary commands with an associated selection criteria **expression**.

Option	Action
ALL	Includes only entries satisfying the expression.
MORE	Additionally includes entries satisfying the expression.
LESS	Excludes entries satisfying the expression.

- **ALL** with no parameters will re-include all list entries. **LESS** with no parameters will exclude all list entries.

**Excluded entries** are represented in the display by **shadow-lines**.

Type primary command **HIDE** to suppress display of shadow-lines, and **RESET HIDE (RES H)** to redisplay them.

### Examples:

- To include only members whose last modified date is in the range **2010/05/01** to **2010/12/12**, type:  
**all LastMod >= 2010/05/01 & LastMod < 2011**
- To exclude all members whose current size is zero records, type:  
**less CurSize=0**
- To reinclude all excluded members whose last modified userid is **USER123** or begins with **USER321**, type:  
**more user=user123 | user >> user321**

```

SELCPY/i - Select Input Members
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> less CurSize >= 90 or CurSize < 10 Scroll> Csr
ZZSGFSU2
Select members to be included in the operation. PF6=Select/Deselect ALL
Library DSN: USER123.SELCTR.N.ZZST5DAT
Member Mask>
Use primary commands FIND, ALL/MORE/LESS to condense member list. 25 Rows
Sel Member LastMod Created CurSize Inisize User Alias Of
- <---+---> <---+---1---+> <---+---> <---+> <---+> <---+---> <---+--->
----- 1 row(s) excluded ----- 0001
S TRACK002 2013/02/21 16:47 2013/02/21 87 87 USER123 0002
----- 1 row(s) excluded ----- 0003
S TRACK004 2013/02/21 16:47 2013/02/21 89 89 USER123 0004
S TRACK005 2013/02/21 16:47 2013/02/21 80 80 USER123 0005
S TRACK006 2013/02/21 16:47 2013/02/21 83 83 USER123 0006
S TRACK007 2013/02/21 16:47 2013/02/21 80 80 USER123 0007
S TRACK008 2013/02/21 16:47 2013/02/21 76 76 USER123 0008
S TRACK009 2013/02/21 16:47 2013/02/21 77 77 USER123 0009
S TRACK010 2013/02/21 16:47 2013/02/21 70 70 USER123 0010
S TRACK011 2013/02/21 16:47 2013/02/21 62 62 USER123 0011
S TRACK012 2013/02/21 16:47 2013/02/21 51 51 USER123 0012
S TRACK013 2013/02/21 16:47 2013/02/21 34 34 USER123 0013
S TRACK014 2013/02/21 16:47 2013/02/21 25 25 USER123 0014
S TRACK015 2013/02/21 16:47 2013/02/21 14 14 USER123 0015
S TRACK016 2013/02/21 16:47 2013/02/21 13 13 USER123 0016
S TRACK017 2013/02/21 16:47 2013/02/21 10 10 USER123 0017
----- 8 row(s) excluded ----- 0018
*** End of Data *** 0026

```

Figure 142. FSU - Member Selection (ALL/MORE/LESS)

## Condensing Selected Members using FIND

The FIND panel is displayed when primary command **FIND (F)** is executed from a member selection list and may be used to condense the list of selected members. Only those members that contain at least one record which satisfies the find operation are selected for subsequent processing.

Following execution of the find operation, the FIND panel remains open to allow further find/condense operations on the list of remaining members.

To follow the demonstration use the panel to pre-select members containing the string **"soul"** (case-insensitive).

- Type **soul** in the *Find string* field.
  - ♦ For simple case-insensitive character strings there is no need to add quotes (this will be done automatically).
  - ♦ You may specify the string using **C'ABCD'** notation if case-sensitivity is required.
  - ♦ Hex strings may be specified using **X'1234'** notation.
- Enter **1** in the *Limit* field in order to display the first hit only. Since the purpose of running the FIND is only to condense the member selection list for a subsequent search, then establishing the presence of more than one hit would be wasteful.
- Enter **Yes** in the *View report* field in order to display the FIND report. This will allow us to use the **F6** facility from the report to edit the hit member. Set this option to **No** if you are not interested in the detail.
- Enter **Yes** in the *Condense member list* field so that, for subsequent FSU operations, any member without at least one search match will be deleted from the selection list.

Press **ENTER** to execute the search.

```

SELCOPY/i - Select Input Members - FIND
File Help                                     wS wR
Command>                                     Scroll> Csr
ZZSGFSU9                                     Lines 1-21 of 21

Find string      ==> 'soul'
Limit            ==> 1      Max number of hits per file/member (0=>All)
Scope           ==> CHARS  (CHARS, WORD, PREFIX, SUFFIX)
Start column     ==> 0      (0=>All columns)
End column       ==> 0      (0=>Start column only)
Start record     ==> 1
Number of records ==> 0      (0=>All)
Relational operator ==> EQ   (EQ, NE, GT, GE, LT, LE)
View report      ==> Yes    Display FSU FIND report output
Condense member list ==> Yes Include only members containing hit(s)
  
```

Figure 143. FSU - Member Selection (FIND)

## Condensed Member Selection List

```

SELCPY/i - Edit USER123.SELCFSU.T111618.RPT using USER123.SELCFSU.T111618.x
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
*** Top of Data ***
Record type: Command Fixed(177) Offset=0 Data elements=4
Timestamp Command
<---+---> <---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
2013/02/25 11:16:18 FSU input ( 'USER123.SELCTRN.ZZST5DAT ( TRACK001 TRACK0

Record type: Summary Variable(51,52) Offset=0 Data elements=14
RunType RecordsTot FilesTot Hits RecordsHit FilesHit RemapErrs
<---+---> <---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
FIND 214 4 4 4 4 0

Record type: Hit Variable(47,454) Offset=0 Data elements=13
zMember zRecord
<---+---> <---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
TRACK001 A02159C78BD2DB0800A428IHey, Soul Sister
TRACK003 DE36E78FD678857800C340ASoulmate
TRACK004 47E5BE872D4779C900D175ESoulmate
TRACK005 5524E0900D7B3C7900E143GSoul Stripper
*** End of Data ***

---- Press PF1 for Help, PF6 to edit file at cursor line ----
Se | Line=0 | Col=1 | Alt=0,0;0 | Size=6 | Recl=454 | Fmt=V | Files=1 | Views=0

```

Figure 144. FSU - FIND Report with LIMIT=1

Exit (**F3**) from the report (if requested) will return to the **FIND** panel where you may execute further search operations to progressively condense the member list.

Exit (**F3**) from the **FIND** panel will return to the condensed member selection list.  
Should you wish to **reset** the condensed list, then just overwrite the *Member Mask* input field and press **ENTER**.

```

SELCPY/i - Select Input Members
File Edit Actions Options Utilities Window SwapList Help wS wR Scroll> Csr
Command>
ZZSGFSU2
Select members to be included in the operation. PF6=Select/Deselect ALL
Library DSN: USER123.SELCTRN.ZZST5DAT
Member Mask> *
Use primary commands FIND, ALL/MORE/LESS to condense member list. 4 Rows
Sel Member LastMod Created Cursize Inisize User Alias Of
- <---+---> <---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
S TRACK001 2013/02/21 16:47 2013/02/21 98 98 USER123 0001
S TRACK003 2013/02/21 16:47 2013/02/21 90 90 USER123 0002
S TRACK004 2013/02/21 16:47 2013/02/21 89 89 USER123 0003
S TRACK005 2013/02/21 16:47 2013/02/21 80 80 USER123 0004
*** End of Data ***

```

Figure 145. FSU - Condensed Member Selection List

## Condensed Member Search Results

Exit (F3) will return to the main FSU panel, where you can run the original search for the string **"blues"** using your condensed member list.

Expected results are displayed below.

```

SELCPY/i - Edit  USER123.SELCFSU.T112212.RPT using USER123.SELCFSU.T112212.x
File Edit Actions Options Utilities Window SwapList Help  wS wR  Scroll> Csr
Command>
*** Top of Data ***
Record type: Command  Fixed(126) Offset=0 Data elements=4
Timestamp            Command
<---+---1---+---> <---+---1---+---2---+---3---+---4---+---5---+---
2013/02/25 11:22:12 FSU input ( 'USER123.SELCTR.N.ZZST5DAT ( TRACK001 TRACK003 T

Record type: Summary  Variable(51,52) Offset=0 Data elements=14
RunType  RecordsTot  FilesTot  Hits  RecordsHit  FilesHit  RemapErrs
<---+---> <---+---> <---+---> <---+---> <---+---> <---+---> <---+--->
FIND      357         4         3         3         3         0

Record type: Hit      Variable(47,454) Offset=0 Data elements=13
zMember  zRecord
<---+---> <---+---1---+---2---+---3---+---4---+---5---+---6---+---7
TRACK003 EF3024088704CFF500C405GWalking In the Shadow of the Blues
TRACK004 079FF06C1501FB9600D797IRoman Wall Blues
TRACK005 7CB7FD20ADBE19AD00E211GBourgeoisie Blues
*** End of Data ***

---- Press PF1 for Help, PF6 to edit file at cursor line ----
Se | Line=0 | Col=1 | Alt=0,0;0 | Size=5 | Recl=454 | Fmt=V | Files=1 | Views=0

```

Figure 146. FSU - Condensed Member Search Results"

## Option 8.1 - Debug SELCOPY/batch language

---

The SELCOPY/debug utility allows you to:

- Interactively step through SELCOPY control statements and set run **break points**.

In doing so, a developer can "**watch**" the values of variables and expressions and also display and update areas of storage.

Coloured highlighting may be used to "track" the location of any **@name** pointer that is visible in a dump style storage window.

The purpose of this is typically either to **analyse a problem** with existing code or simply gain an understanding of how a job operates.

The tool is also invaluable when **developing new SELCOPY job steps**, as the control statements may be **modified** and **rerun** without leaving the debug environment.

- SELCOPY/debug runs as separate application under SELCOPYi.  
This means it has its own "**ring**" of movable/resizable **windows** used to display:

- ◆ SYSIN control statements
- ◆ SYSPRINT output listing
- ◆ Watch List for variable and storage locations
- ◆ Dump format storage for Work Area, POS Expressions and @ Pointers
- ◆ EQUated names/values
- ◆ Execution TRACE
- ◆ IMS PCB
- ◆ SQL Log
- ◆ WTO Log

- Debug SELCOPY step(s) from an **existing Batch Job**.

Input/Output files will be allocated automatically using **DD statements** extracted from the job.

Any SELCOPY step may be selected to run either in interactive debug mode, or as a (foreground) subtask.

Any non-SELCOPY step may also be selected to run as a subtask, but execution of PROCs is not supported.

- Debug SELCOPY/batch control statements from a dataset.

In which case it is the user's responsibility to ensure that all necessary input/output datasets are allocated to the appropriate filenames prior to execution.

Alternatively, you may use SELCOPY's own **dynamic allocation**.

e.g.

```
READ  INDD  DSN='MY.INPUT.DATASET.NAME '  
WRITE OUTDD DSN='MY.OUTPUT.DATASET.NAME '
```



## Locate Sample SELCOPY JCL

We'll use a supplied sample SELCOPY batch job to explore the debug utility.

To locate the sample JCL, if available, first we'll need to identify the high-level qualifier (HLQ) under which the SELCOPY package was installed.

To do this, first select option **1** from the SELCOPYi **Primary Option Menu** (=) to access the **Settings** panel.

At the bottom of this panel you'll see the REXX Macro Path library definitions.

Make a note of the library name indicated for

**CBL Supplied Library:**

The library name should take the form *hlq*.**SZZSDIST.CBLE** as shown in the sample below.

Make a note of this HLQ as we'll refer to it later as **SiteHLQ**.

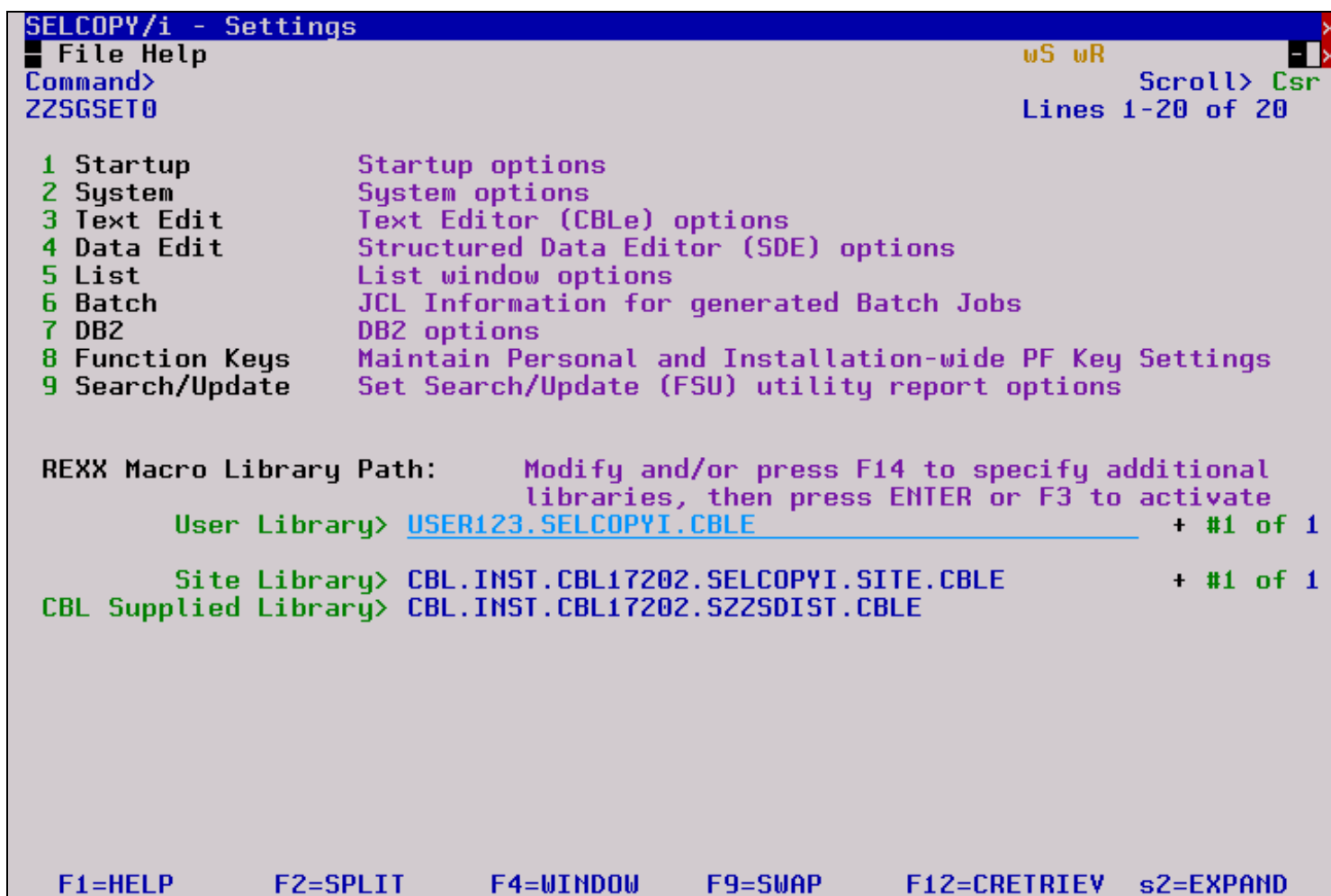
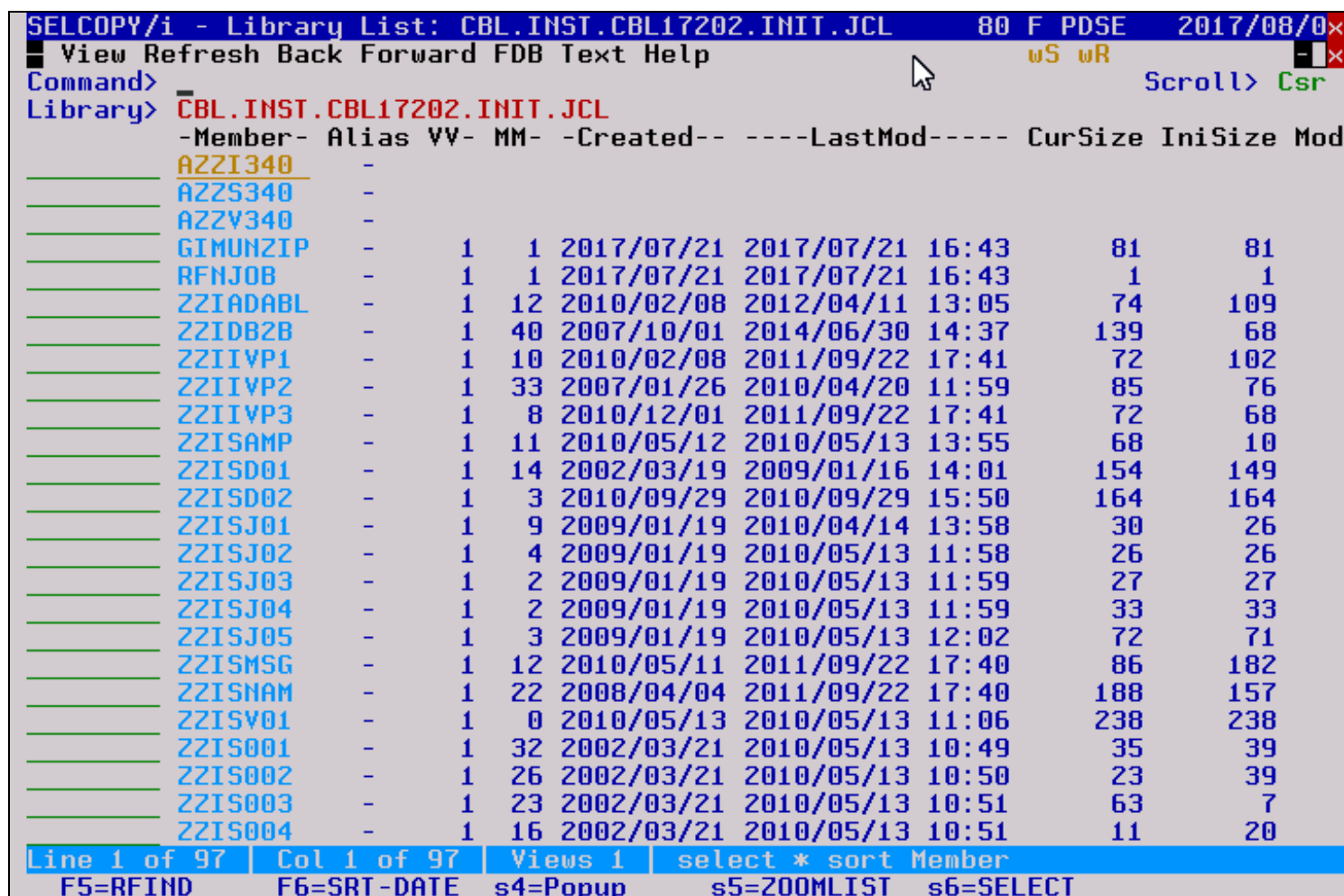


Figure 147.01 SELCOPY/debug Menu (=8.1)

## List the sample JCL library

Now type in the primary command: **LL SiteHLQ..INIT.JCL**

A Library List will be displayed as shown below.



SELCOPY/i - Library List: CBL.INST.CBL17202.INIT.JCL 80 F PDSE 2017/08/0

View Refresh Back Forward FDB Text Help wS wR Scroll> Csr

Command>

Library> CBL.INST.CBL17202.INIT.JCL

Member	Alias	VV	MM	Created	LastMod	CurSize	IniSize	Mod
AZZI340	-							
AZZS340	-							
AZZV340	-							
GIMUNZIP	-	1	1	2017/07/21	2017/07/21 16:43	81	81	
RFNJOB	-	1	1	2017/07/21	2017/07/21 16:43	1	1	
ZZIADABL	-	1	12	2010/02/08	2012/04/11 13:05	74	109	
ZZIDB2B	-	1	40	2007/10/01	2014/06/30 14:37	139	68	
ZZIIVP1	-	1	10	2010/02/08	2011/09/22 17:41	72	102	
ZZIIVP2	-	1	33	2007/01/26	2010/04/20 11:59	85	76	
ZZIIVP3	-	1	8	2010/12/01	2011/09/22 17:41	72	68	
ZZISAMP	-	1	11	2010/05/12	2010/05/13 13:55	68	10	
ZZISD01	-	1	14	2002/03/19	2009/01/16 14:01	154	149	
ZZISD02	-	1	3	2010/09/29	2010/09/29 15:50	164	164	
ZZISJ01	-	1	9	2009/01/19	2010/04/14 13:58	30	26	
ZZISJ02	-	1	4	2009/01/19	2010/05/13 11:58	26	26	
ZZISJ03	-	1	2	2009/01/19	2010/05/13 11:59	27	27	
ZZISJ04	-	1	2	2009/01/19	2010/05/13 11:59	33	33	
ZZISJ05	-	1	3	2009/01/19	2010/05/13 12:02	72	71	
ZZISMSG	-	1	12	2010/05/11	2011/09/22 17:40	86	182	
ZZISNAM	-	1	22	2008/04/04	2011/09/22 17:40	188	157	
ZZISV01	-	1	0	2010/05/13	2010/05/13 11:06	238	238	
ZZIS001	-	1	32	2002/03/21	2010/05/13 10:49	35	39	
ZZIS002	-	1	26	2002/03/21	2010/05/13 10:50	23	39	
ZZIS003	-	1	23	2002/03/21	2010/05/13 10:51	63	7	
ZZIS004	-	1	16	2002/03/21	2010/05/13 10:51	11	20	

Line 1 of 97 Col 1 of 97 Views 1 select \* sort Member

F5=RFIND F6=SRT-DATE s4=Popup s5=ZOOMLIST s6=SELECT

Figure 148. 02 SELCOPY/debug Menu (=8.1)

## Copy the Sample Job to a personal library

From the Library List, locate member **ZZSSDB1** and use the SELCOPYi Text-Editor to edit it.

This sample job uses SELCOPY to selectively read members of the SELCOPYi supplied help library (sourced in **HTML**) in order to produce a report of all embedded **hyper-links**.

**Hyper-links** are defined using an HTML tag such as

```
<A NAME="LinkName" >
```

The JCL is supplied with references to dataset names that require tailoring for your installation and userid, so you will need to take a copy of the JCL in order to modify it.

e.g. With "C\*" inserted in the prefix area of the first line, type:

```
CREATE userpfx.SELCTRN.JCL(ZZSSDB1)
```

```

SELCOPY/i - CBL.INST.CBL17202.INIT.JCL(ZZSSDB1)      80 F PDSE   Size=76   Alt=x
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> cre USER123.SELCTRN.JCL(ZZSSDB1)          Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
C*  //ZZSSDB1 JOB (ACCT#), 'CBLINST',
000002 //                                USER=,                                /* RACF */
000003 //                                GROUP=,                              /* RACF */
000004 //                                PASSWORD=,                          /* RACF */
000005 //                                NOTIFY=,
000006 //                                CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1)
000007 /**
000008 /**
000009 /**
000010 //DELETE EXEC PGM=IDCAMS,REGION=0M
000011 //SYSPRINT DD SYSOUT=*
000012 //SYSIN DD *
000013 DELETE JGE.ZZSSDB1.OUTPUT PURGE
000014 /*
000015 /**
000016 /**
000017 //SETPAR1 SET ALLOC='TRK',PRI='2',SEC='1' Output file geometry.
000018 //SETPAR2 SET DISP=(NEW,CATLG),UNIT=SYSALLDA
000019 /**
000020 //ZZSSDB1A EXEC PGM=SELCOPY,REGION=0M
000021 //HELPLIB DD DISP=SHR,DSN=NBJ.INST.CBL13295.SZZSHELP.HTML
000022 //OUTFILE DD DISP=&DISP,DSN=JGE.ZZSSDB1.OUTPUT,
000023 //          UNIT=&UNIT,
000024 //          DCB=(DSORG=PS,RECFM=VB,LRECL=256,BLKSIZE=0),
000025 //          SPACE=(&ALLOC,(&PRI,&SEC),RLSE)
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1 | Col=1 | Alt=0,0;0 | Size=76 | Recl=80 | Fmt=F | Files=1 | Views=1

```

Figure 149. 03 SELCOPY/debug Menu (=8.1)

## Tailor the Sample Job

Use your preferred method to copy the JCL into a library called **userpfx.SELCTRN.JCL**, then issue the following **CHANGE** commands to tailor the job so it may be run locally.

- **CHANGE ALL 'NBJ.INST.CBL13295' 'SiteHLQ'**

Where "SiteHLQ" is the high-level qualifier determined earlier.

- **CHANGE ALL 'JGE' 'userpfx'**

Where "userpfx" is the user prefix used to create your own personal datasets.

```

SELCOPY/i - USER123.SELCTRN.JCL(2ZSSDB1) 80 F PDSE Size=76 Alt=4,4;5
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> c all 'NBJ.INST.CBL13295' 'CBL.INST.CBL17202' Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001 //2ZSSDB1 JOB (ACCT#), 'CBLINST',
000002 //          USER=,
000003 //          GROUP=,
000004 //          PASSWORD=,
000005 //          NOTIFY=,
000006 //          CLASS=A,MSGCLASS=X,MSGLEVEL=(1,1)
000007 /**
000008 /**
000009 /**
000010 //DELETE EXEC PGM=IDCAMS,REGION=0M
000011 //SYSPRINT DD SYSOUT=*
000012 //SYSIN DD *
==CHG> DELETE USER123.2ZSSDB1.OUTPUT PURGE
000014 /*
000015 /**
000016 /**
000017 //SETPAR1 SET ALLOC='CYL',PRI='2',SEC='1' Output file geometry.
000018 //SETPAR2 SET DISP=(NEW,CATLG),UNIT=SYSALLDA
000019 /**
000020 //2ZSSDB1A EXEC PGM=SELCOPY,REGION=0M
==CHG> //HELPLIB DD DISP=SHR,DSN=CBL.INST.CBL17202.S2ZSHELP.HTML
==CHG> //OUTFILE DD DISP=&DISP,DSN=USER123.2ZSSDB1.OUTPUT,
000023 //          UNIT=&UNIT,
000024 //          DCB=(DSORG=PS,RECFM=VB,LRECL=256,BLKSIZE=0),
000025 //          SPACE=(&ALLOC,&PRI,&SEC),RLSE)
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLITJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1 | Col=1 | Alt=4,4;5 | Size=76 | Recl=80 | Fmt=F | Files=1 | Views=1

```

Figure 150. 04 SELCOPY/debug Menu (=8.1)

## Run the Sample Job in Batch

Once the job has been correctly tailored, SAVE the changes then submit the job to check it runs OK.

Then we can take a look at the expected output report which will have been written to dataset **userpfx.ZZSSDB1.OUTPUT**.

Edit the report file and note it tells us that help library member "ZZSIABOU" has hyper-links on records 49, 56, 57, 58 and 69.

The screenshot shows a terminal window titled "SELCOPY/i - Browse USER123.ZZSSDB1.OUTPUT 252 V SEQ". The menu bar includes File, Edit, Actions, Options, Utilities, Window, SwapList, and Help. The status bar at the bottom shows "Se | Line=2 | Col=1 | Alt=0,0;0 | Size>1276 | Recl=252 | Fmt=V | Files=1 | View".

The main display shows a list of records with the following columns: Member, RecNo, and a list of hyper-links. The records are grouped by Member. The first group is for Member "ZZSIABOU" (records 49-69). The second group is for Member "ZZSIABOO" (records 44-79). The third group is for Member "ZZSIACTN" (records 55-62).

Member	RecNo	Hyper-links
ZZSIABOU	00049	<a name="zzsiabou">
ZZSIABOU	00056	<a HREF="zzsisumc.html">
ZZSIABOU	00057	<a HREF="zzsigett.html">
ZZSIABOU	00058	<a HREF="zzsicont.html">
ZZSIABOU	00069	<A NAME="AboutCBLi">
ZZSIABOO	00044	<A NAME="zzsiabo0">
ZZSIABOO	00051	<A HREF="zzsiccom.html">
ZZSIABOO	00052	<A HREF="zzsialia.html">
ZZSIABOO	00053	<A HREF="zzsicont.html">
ZZSIABOO	00064	<A NAME="ABOUT">
ZZSIABOO	00070	<A NAME="syn">
ZZSIABOO	00076	<A NAME="des">
ZZSIABOO	00079	<A HREF="zzsisabo.html#zzsisabo">
ZZSIACTN	00055	<a name="ZZSIACTN">
ZZSIACTN	00062	<a HREF="zzsiccom.html">

At the bottom of the window, there are keyboard shortcuts: F5=RFIND, F6=RCHANGE, s1=InsLine, s2=DelLine, s3=DupLine, s4=Options, s5=ZoomW, s10=UNDO, s11=REDO.

Figure 151. 05 SELCOPY/debug Menu (=8.1)

## Cross-Check the Report (optional)

If you like, you can cross-check the results by editing member **SiteHLQ.SZZSHELP.HTML(ZZSIABOU)**.

```

SELCOPY/i - CBL.INST.CBL17202.SZZSHELP.HTML(ZZSIABOU) 252 V PDS Size=154x
File Edit Actions Options Utilities Window SwapList Help wS wR
Command> | Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000035 <!-- comment block beg -->
000036 <HEAD>
000037 <META NAME="CREATED" content="2004/02/03 15:30:29">
000038 <META HTTP-EQUIV="Content-Style-Type" CONTENT="text/css">
000039 <TITLE>About SELCOPYi</TITLE>
000040 <LINK HREF="zzsisumc.html" REL="prev" >
000041 <LINK HREF="zzsigett.html" REL="next" >
000042 <LINK HREF="zzsicont.html" REL="contents" >
000043 </HEAD>
000044 <!-- comment block end -->
000045
000046 <!-- comment block beg -->
000047 <BODY><DIV CLASS="body">
000048 </DIV>
000049 <span id="zzsiabou"><a name="zzsiabou"></a>
000050 <DIV CLASS="navigbar" >
000051 <HR>
000052 <table border="0" cellspacing="0" cellpadding="0">
000053 <colgroup width="60%"></colgroup>
000054 <colgroup width="40%"></colgroup>
000055 <tr><td align="left">
000056 &nbsp;<a HREF="zzsisumc.html" >previous </A>
000057 &nbsp;<a HREF="zzsigett.html" >next </A>
000058 &nbsp;<a HREF="zzsicont.html" >contents </A>
000059 </td>
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine
s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=35 | Col=1 | Alt=0,0;0 | Size=154 | Recl=252 | Fmt=V | Files=2 | View

```

Figure 152. 06 SELCOPY/debug Menu (=8.1)

## The SELCOPY/debug Menu

The SELCOPY/debug menu panel may be accessed using any of the following methods:

- Select option **8** from the SELCOPYi **Primary Option Menu** (=) to access the **Utilities menu** then select option **1**..
- At any primary command prompt type **=8.1**.
- At any primary command prompt type **SELCOPY (SELC)**.

```

SELCOPY/i - Utilities Menu
File Help
Command> 1_
ZZSGUTIL
Lines 1-21 of 21

Primary Cmd
1 SELCOPY/debug SELC SELCOPY/batch language interactive debug
2 CBLVCAT VCAT Catalog/VTOT report online execution
3 IDCAMS AMS Execute IDCAMS commands interactively
4 Catalog ALIAS AMSA AMSA - Define new Catalog Alias
5 Library ALIAS ALI Create new PDS/PDSE library member Alias
6 IEBCOPY IEBC Execute IEBCOPY interactively
7 Favourites FAV Favourite Datasets/Commands
8 System SY Display System Information
9 Search FS Basic PDS/PDSE Library string search
10 Find Lib Member(s) LLX Search for member(s) across multiple libraries
11 Compare Files COMPF Compare Files
12 Compare Libraries COMPL Compare Libraries
13 Calendar CAL Basic Calendar
14 Calculator CALC REXX expression calculator
15 Alloc/Define Create new VSAM or Sequential datasets
16 XML-Gen XML Produce eXtensible Markup Language from Data File
17 CSV-Gen CSV Produce Comma Separated Variables from a Data File
18 JSON-Gen JSON Produce JavaScript Object Notation from Data File
19 Merge Datasets MERGE Merge a number datasets sorted by a key field

F1=HELP F2=SPLIT F4=WINDOW F9=SWAP F12=CRETRIEV s2=EXPAND
  
```

Figure 153. 07 SELCOPY/debug Menu (=8.1)

## Select option to supply JCL

Since we have an existing batch job, select option 1 to "Supply JCL".

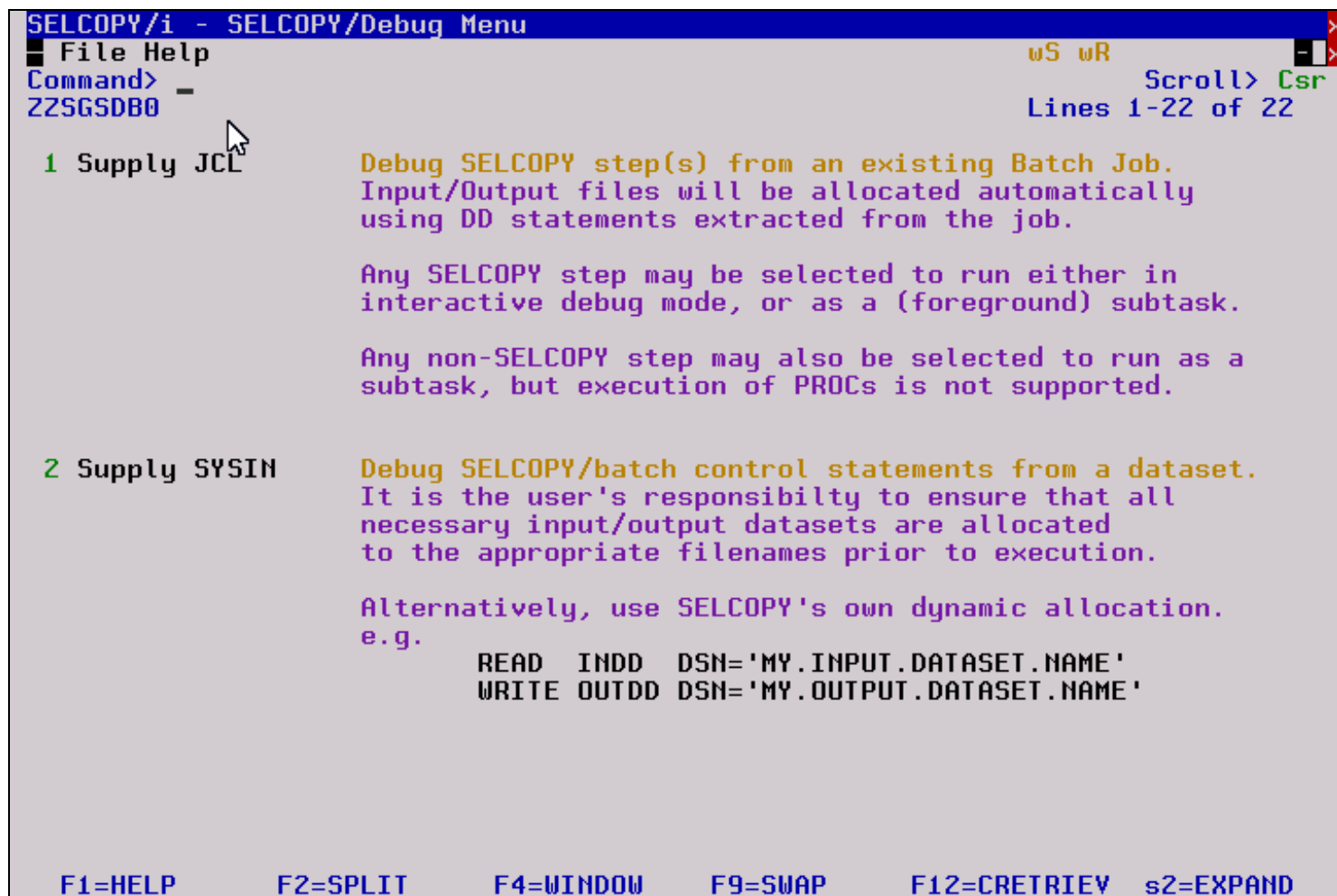


Figure 154. 08 SELCOPY/debug Menu (=8.1)



## Specify JCL to debug

- Type **userpfx.SELCTRN.JCL** in the *Dsn* field, to specify the JCL library.
- Type **ZZSSDB1** in the *Member* field, or leave blank to select from a member list.
- You now have the option of pressing Function key **F5** to edit the job before proceeding.
- When you're ready to proceed press **ENTER** to analyse the JCL.

This process will create some local work datasets.

These will be automatically deleted once the debug session has ended.

The created work datasets will include separate library members corresponding to any **in-stream (DD \*) datasets** encountered in the job.

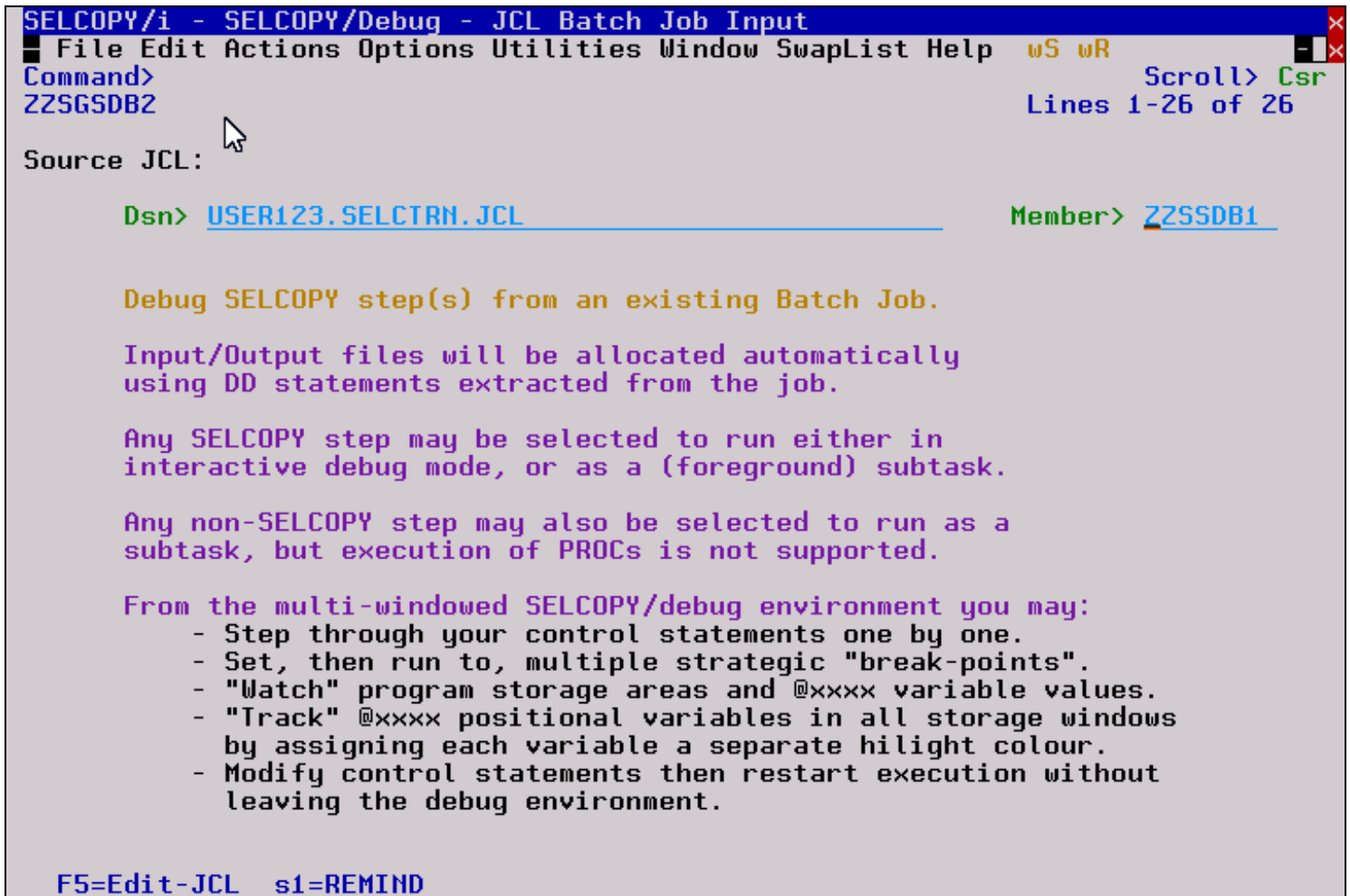


Figure 155. 09 SELCOPY/debug Menu (=8.1)

## Job Step Selection

Once the JCL analysis has completed you will be presented with a **Job Step Selection panel**, which lists all the steps found in the JCL.

Initially all steps are selected to run, with any steps that run **PGM=SELCOPY** or **PGM=SLC** set to run in **Debug mode**.

Our sample job has only two steps.

The first runs **PGM=IDCAMS** in order to delete the output dataset ahead of the second step which creates it afresh.

Only the second step which runs **PGM=SELCOPY** is set to run in **debug mode**, but please be aware that this too is optional.

If you have a JCL deck containing several SELCOPY steps, with the early ones only required in order to set up for the step(s) you wish to debug, then it makes sense to just run them normally in the foreground, just like any other program.

To do this just blank out the **"Y"** in the **"Debug"** column for those steps.

Press the **HELP** key for more information if required.

Press **ENTER** to run the selected job steps.

The **"DELETE"** step will run IDCAMS in the TSO foreground first.

Then the SELCOPY/debug application will start to run the **"ZZSSDB1A"** step interactively.

```

SELCOPY/i - SELCOPY/Debug - Job Step Selection List
File Edit Actions Options Utilities Window SwapList Help  wS wR
Command> -
ZZSGSDB1
Source JCL: USER123.SELCTRN.JCL (ZZSSDB1)
Cleanup> YES Erase work files on exit?
Sel Debug Step PGM PROC Status RetCode Info
S DELETE IDCAMS Pending
S Y ZZSSDB1A SELCOPY Pending
*** End of Data ***
F4=WINDOW F5=Edit-JCL F6=WORKF F9=SWAP F12=CRETRIEV s5=ZOOM
s7=Select s8=Deselect s10=UNDO s11=REDO s12=REFRESH
  
```

Figure 156. 10 SELCOPY/debug Menu (=8.1)

## Non-windowed Display Mode for Standard Screen Sizes

Although not recommended, the SELCOPY/debug application may be used on a one of the **standard 3270 models** that provide a very basic number of rows/columns (e.g. Model 3 provides **32 rows x 80 columns**).

In this case the debugger starts in **non-windowed display mode** and, as depicted below, you will see the "SYSIN" window in "full-screen" mode.

The other "windows" that we are about to encounter will still be available, either by using the "WINDOW" key (**F4**) to scroll around the window ring, or by using the "View" menu-bar item to directly access any window from a drop-down selection list.

Alternatively, although not really very practical, you may switch to windowed-mode even on a small screen size.

To do this select the "Restore" button located one character to the left of the red "x" (close button) at the top right of the screen.

Entering the primary command **WIN RESTORE** will also achieve this.

```

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0 - USER123.SELCDEBUG
File View Go StepOver StepInto ReRun Window Help      wS wR
Command> hilite selc                                     Scroll> Csr
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---
000001 ** USER123.SELCDEBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) *** L=001 --- 2017/08/0
000002 *<<SELCDBJ>>|e 'user123.selctrn.jcl(zzssdb1)'
000003
000004     equ  Member          1
000005     equ  InputRec        1001
000006     equ  OutputRec       2001
000007
000008     option worklen=4096
000009
000010     read HELPLIB into InputRec      dirdata
000011
000012 ** Select member **
000013     if dir
000014         then do SelectMember
000015         then goto get
000016
000017
000018 ** Select data records from selected members **
000019     if pos InputRec,InputRec+Lrecl-1 = '<A '
000020     or pos InputRec,InputRec+Lrecl-1 = '<a '
000021         then if pos @,InputRec+Lrecl-1 = '>'      ptr=@END
000022             then cvbc 4 at uxincount to OutputRec+8+1 format='99999'
000023             then @LEN=@END-@+1
000024             then pos OutputRec+8+1+6 = @LEN AT @
000025             then do SetMember
000026
000027     s1=StepOver   s2=StepInto   s3=Go       s4=Popup     s5=MrkBox   s6=MrkLine
000028     s7=BreakPt   s8=BoxFuncs   s10=UNDO    s11=REDO     s12=ResetBox
Te | Line=1 | Col=1 | Alt=0,0;1 | Size=49 | Recl=80 | Fmt=F | Files=4 | Views=4
  
```

Figure 157. 11 SELCOPY/debug Menu (=8.1)

## SELCOPY/debug Operation

- When the debugger starts in windowed display mode then a number of windows are displayed automatically.

- "SYSIN" displays the active SELCOPY control statements in a Text-Edit style window. Its default location is at the **top-left** of the screen.
- "SYSPRINT" displays SELCOPY's printed output in another Text-Edit style window. Its default location is at the **bottom-right** of the screen.
- "Work Area" displays the data starting at **POS=1** in a dump-style storage window. Its default location is at the **top-right** of the screen.

- In the **SYSIN** window, the **current operation** (that will be executed next) is highlighted in **blue reverse-video**.

The screen shots that follow were recorded with "**HILITE SELCOPY**" activated to provide **syntax highlighting** for SELCOPY control statements. This is not set on by default and is not always desirable as too much colour highlighting can be distracting.

- The **SYSPRINT** window will refresh itself during the course of the run, automatically scrolling to the bottom to reveal any fresh print output.

The screen shots that follow were also recorded with "**HILITE SELCOPY**" activated in the SYSPRINT window. Again, this is not necessarily desirable.

- The "**Work Area**" storage window will initially display blanks since the first operation (which is likely to cause input) has not yet been executed.

Storage windows display data in rows of 4, 8, 16 or 32-bytes depending on the window width. They may be scrolled up and down to reveal more data, and that **data may be modified** at any time by **overtyping** either the hex or character areas.

```

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0
File View Go Steppover Stepinto ReRun Window Help      wS wR

--USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN)  80 F PDSE  Size=49  --+
Command>
<---+---1---+---2---+---3---+---4---+---5---+---6---+---7---+---8---+---9---+---10---+---11---+---12---+---13---+---14---+---15---+---16---+---17---+---18---+---19---+---20---+---21---+---22---+---23---+---24---+---25---+---26---+---27---+---28---+---29---+---30---+---31---+---32---+---33---+---34---+---35---+---36---+---37---+---38---+---39---+---40---+---41---+---42---+---43---+---44---+---45---+---46---+---47---+---48---+---49---+
000001  ** USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN)  *** L=001 --- 2017/
000002  *(<SELCDBJ>)>|e 'user123.selctrn.jcl(zzssdb1)'
000003
000004      equ Member      1
000005      equ InputRec     1001
000006      equ OutputRec    2001
000007
000008      option worklen=4096
000009
000010      read HELPLIB into InputRec  dirdata
000011
000012  ** Select member **
000013      if dir
000014          then do SelectMember
000015          then goto get
000016
000017
000018  ** Select data records from selected members **
000019      if pos InputRec,InputRec+Lrecl-1 = '<A '
000020      or pos InputRec,InputRec+Lrecl-1 = '<a '
000021          then if pos @,InputRec+Lrecl-1 = '>'      ptr=@END
000022          then cvtb 4 at uxincount to OutputRec+8+1 format='99999
000023          then @LEN=@END-@+1
000024          then pos OutputRec+8+1+6 = @LEN AT @
000025          then do SetMember
000026          then print      from OutputRec  length=@LEN+8+1+6 s=1
000027          then write OUTFILE from OutputRec  length=@LEN+8+1+6
000028      goto get
000029
000030
000031
000032 ==SelectMember==
000033      if pos InputRec = 'ZZSI'
000034      or pos InputRec = 'ZZSS'
000035          then pos Member      = 8 at InputRec
000036          else flag eomemb      * Indicate End-Of-Member.
000037      return
000038
000039 ==SetMember==
000040      if pos Member = ' '
000041
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO
s12=ResetBox
Te Line=1 Col=1 Alt=0,0/2 Size=67 Recl=133 Fmt=U Files=4 Views=4 2017/08/03 09:14:24
  
```

Figure 158. 12 SELCOPY/debug Windowed

## Customisable Window Locations

- All debug windows may be moved and resized in the standard fashion.
- Any customised window locations will be **preserved across debug sessions**.
- Recommended layout for standard initial windows shown below.

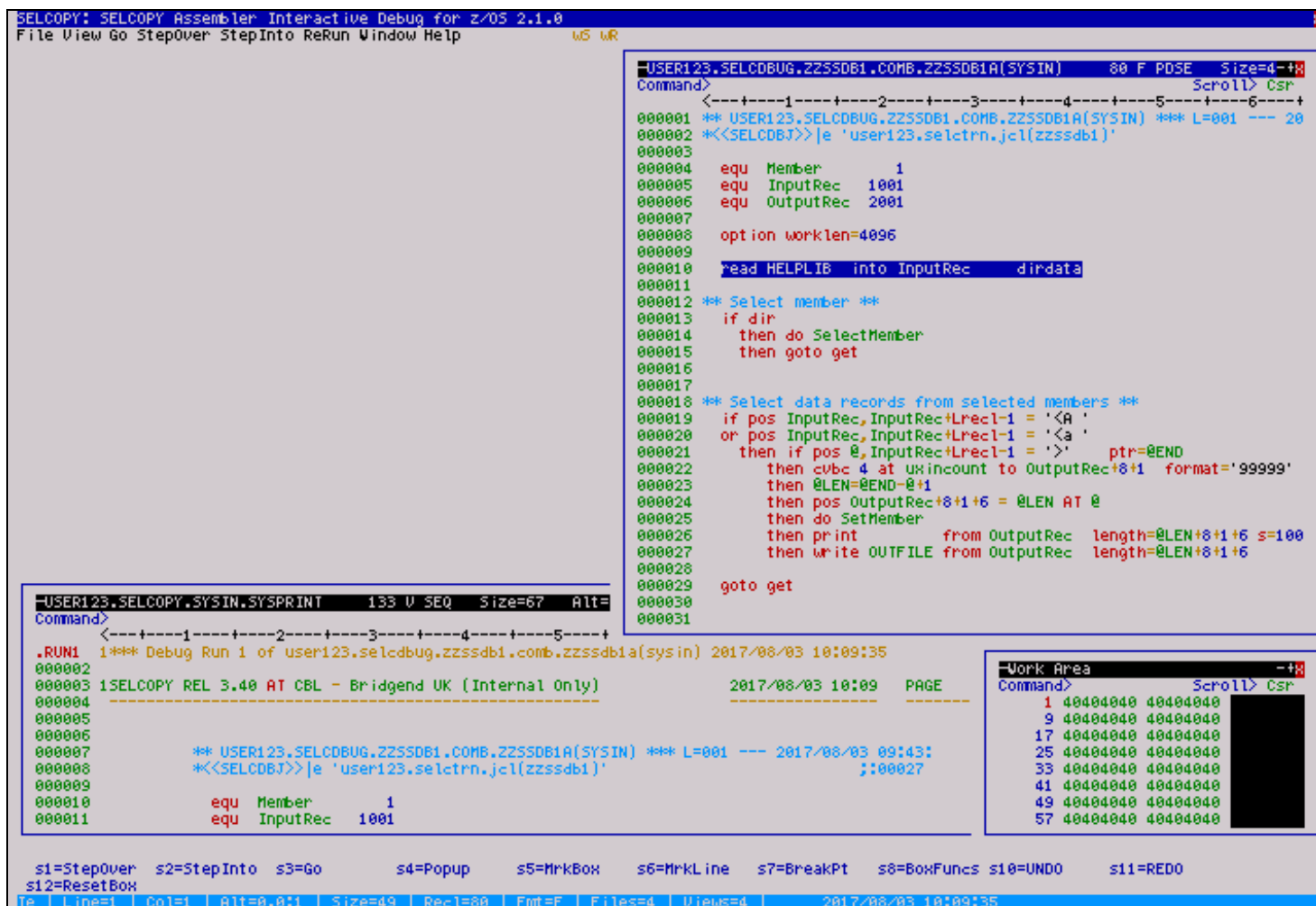


Figure 159. 13 SELCOPY/debug Windowed

## Stepping through Control Statements (1)

- To gain an understanding of the way this particular SELCOPY job operates, we'll start by tracing through a few statements one at a time.
- The first statement will read a record from our input **HTML library** into a location within our work area defined as position **InputRec**, which is a symbolic name (EQUate) for **1001**.

Before we execute the **READ statement**, in order to **monitor** the input from **HELPLIB**, we'll open up a new **storage window** to display the data at **POS InputRec**.

This could be done by typing in a simple primary command: **WIN POS InputRec**

Alternatively, with focus on the SYSIN window, move your cursor onto any occurrence of the word **InputRec**. Then press Function Key **F4** to display the cursor sensitive **popup menu** as shown below.

This key provides menu access to a variety of SELCOPY/debug features. Among them, the item **Storage@Pos "xxx"** will open a dump window for the specified position ("**xxx**" being the word at the cursor location).

To select an item from the popup, simply move your cursor to it and press **ENTER**, or select it with your mouse if you have your **3270 emulator** set up for this useful feature.

```

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0
File View Go StepOver StepInto ReRun Window Help

-USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) 80 F PDSE Size=4-+X
Command>
000001 ** USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) *** L=001 --- 20
000002 *(<SELCDBJ>>[e 'user123.selctrn.jcl(zzssdb1)']
000003
000004 equ Member 1
000005 equ InputRec 1001
000006 equ OutputRec 2001
000007
000008 option worklen=4096
000009

Set Text-Edit Function Keys
Action> read HELPLIB into InputRec dirdata...
Watch Var "InputRec"
Watch Pos "InputRec" <edit>
Storage@Pos "InputRec" <edit>
Track "InputRec" <edit>
Track List
Break <toggle> (BR)
Run to next break-point (GO)
Clear all break-points (BR CL ALL)
Suspend all break-points (BR S)
Resume all break-points (BR R)
Restart (RR)
Immediate End-of-Job (EOJ)
Window Layout

-USER123.SELCOPY.SYSIN.SYSPRINT 133
Command>
.RUN1 1*** Debug Run 1 of user123.selc
000002
000003 1SELCOPY REL 3.40 AT CBL - Bridg
000004
000005
000006
000007 ** USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) *** L=001 --- 2017/08/03 09:43:
000008 *(<SELCDBJ>>[e 'user123.selctrn.jcl(zzssdb1)'] ;:00027
000009
000010 equ Member 1
000011 equ InputRec 1001

s1=StepOver s2=StepInto s3=Go s4=Popup s5=MrkBox s6=MrkLine s7=BreakPt s8=BoxFuncs s9=UNDO s11=RED0
s12=ResetBox
Te | Line=1 Col=1 Alt=0,0;1 | Size=49 | Rec1=80 | Fmt=F | Files=4 | Views=4 | 2017/08/03 10:09:35
  
```

Figure 160. 14 SELCOPY/debug Windowed

## Stepping through Control Statements (2)

- Initially we'll be tracing through the statements using the **StepOver** function.

**StepOver** and **StepInto** are distinct from each other in only one particular respect (to be revealed in due course).

- To trace the next statement use any one of the following:
  - Select the **StepOver** item from the main menu-bar at the top of the screen.
  - Type the primary command **STEPOver (SO)**.
  - Press function key **Shift-F1 (F13)**.
- The storage window for **POS InputRec** will now display the first record from **HELPLIB**, and the next statement ("**if dir**") will be highlighted.

Since the **READ** statement just executed uses the **DIRECTDATA** keyword, (which indicates input of **DIR**ectory and **DATA** records from a PDS/PDSE library is required) we see the directory record for the **first member** of **HELPLIB**.

The member name "**@@@INDEX**" occupies the first 8 bytes of this record.

Other directory information such as **timestamps**, **member size** etc follow but are not in readable character format.

```

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0
File View Go StepOver StepInto ReRun Window Help

-Pos INPUTREC (WorkArea POS 1001)
Command>
1 7C7C7C9 D5C4C5E7 0010010F 01230042 00000000
17 0115028F 0117191F 1542095E 00010000 00000000
33 D5C2D140 40404040 40404040 40404040 40404040
49 40404040 40404040 40404040 40404040 40404040
65 40404040 40404040 40404040 40404040 40404040
81 40404040 40404040 40404040 40404040 40404040
97 40404040 40404040 40404040 40404040 40404040

-USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) 80 F PDSE Size=4+
Command>
000001 ** USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) *** L=001 --- 20
000002 **<<SELCDBJ>>[e 'user123.selctrn.jcl(zssssdb1)']
000003
000004 equ Member 1
000005 equ InputRec 1001
000006 equ OutputRec 2001
000007
000008 option worklen=4096
000009
000010 read HELPLIB into InputRec dirdata
000011
000012 ** Select member **
000013 if dir
000014 then do SelectMember
000015 then goto get
000016
000017 ** Select data records from selected members **
000018 if pos InputRec,InputRec+Lrecl-1 = '<A '
000019 or pos InputRec,InputRec+Lrecl-1 = '<a '
000020 then if pos 0,InputRec+Lrecl-1 = '>' ptr=@END
000021 then cvbc 4 at uxincout to OutputRec+8+1 format='99999'
000022 then @LEN=@END-@+1
000023 then pos OutputRec+8+1+6 = @LEN AT @
000024 then do SetMember
000025 then print from OutputRec length=@LEN+8+1+6 s=100
000026 then write OUTFILE from OutputRec length=@LEN+8+1+6
000027
000028 goto get
000029
000030
000031

-USER123.SELCOPY.SYSIN.SYSPRINT 133 U SEQ Size=67 Alt=
Command>
000058 15. else pos OutputRec = 8 at Member
000059 16. then write OUTFILE from ' '
000060 17. then write OUTFILE from 'Member RecNo ***'
000061 18. then write OUTFILE from '-----'
000062
000063 19. pos Member = ' '
000064
000065 20. return
000066
000067
000068 * * * End of File * * *

Work Area
ommand>
1 40404040 40404040
9 40404040 40404040
17 40404040 40404040
25 40404040 40404040
33 40404040 40404040
41 40404040 40404040
49 40404040 40404040
57 40404040 40404040

F1=HELP F2=SPLIT F4=WINDOW F9=SWAP F12=RETRIEV
Te Line=1 Col=1 Alt=0,0;0 Size=49 Rec1=80 Fmt=F Files=4 Views=4 2017/08/03 10:13:41
  
```

Figure 161. 15 SELCOPY/debug Windowed



## StepOver/StepInto sub-routines

- Use **StepOver** again to trace through the "if dir" statement, which tests if the most recently read record was a directory record.

We expect the test to succeed in this case so we logically proceed to the immediately following "THEN" statement, which will be highlighted.

- The statement "then do SelectMember" will cause SELCOPY to perform a **sub-routine** defined within its control statements using a **label**.

The debugger provides a choice when tracing is halted at a **DO** statement (synonyms are **PERFORM** and **GOSUB**).

Do you want to trace **INTO** or **OVER** the sub-routine?

The **StepInto** function subsequently allows the user to step through individual statement within the performed sub-routine.

The **StepOver** function treats the sub-routine call as a single statement, **breaking** next on the statement that **logically** follows the **return** from that sub-routine.

To be absolutely clear, if you choose **StepOver**, the statements within the performed sub-routine are still executed, it's just that the debugger will not **break** on each one.

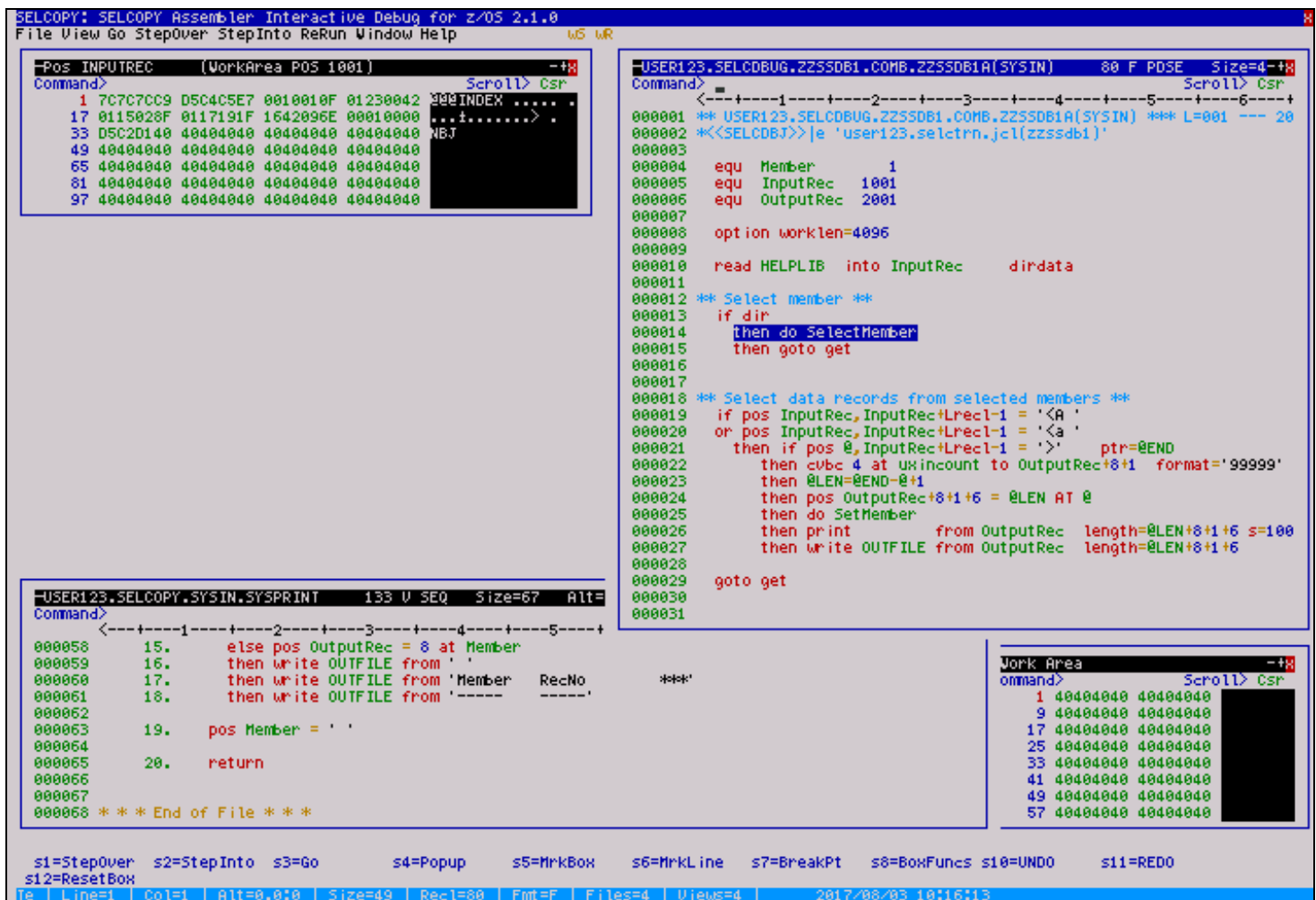


Figure 162. 16 SELCOPY/debug Windowed



## Setting a run BREAK point

- Use the **StepInto** function this time, so we can trace through the statements within the sub-routine.

**StepInto** may be selected from the menu-bar or by pressing **Shift-F2 (F14)**.

The SYSIN window will automatically scroll to the first statement following the sub-routine user-label. In addition, provided that the current statement is still visible, the debugger will attempt to scroll the top line of the display to the nearest preceding **"heading"**. A "heading" in this context is defined as a line containing at least **two consecutive asterisks** or **equals-signs**.

So, to ensure that the sub-routine name label appears at the top of the screen, just enclose your label names in **"=="** (which are not treated as part of the name) as shown below.

- The **"SelectMember"** sub-routine tests for library member names beginning with either **"ZZSI"** or **"ZZSS"**, and forces **bypass** of all further processing for those that fail this selection.

Since this is a large library, and we don't want to trace through failing selection of hundreds of members, this is a perfect opportunity to set our first **break-point**.

- Place your cursor anywhere within the SYSIN statement ...

```
then pos Member = 8 at InputRec
```

... then set a break-point on that statement using one of the following methods:

- Press **F4** to display the popup, then select **"Break"**.
- Press function key **Shift-F7 (F19)** which executes the primary command **Breakpoint (BRK)**.

Repeating the operation will **toggle** an existing break-point OFF then ON again.

Type **"HELP BR"** for more information about this command.

- Any statement set as a **break-point** will be highlighted in **red reverse-video**.

The screenshot shows the SELCOPY Interactive Debug window for z/OS 2.1.0. The main window displays the SYSIN statement with a break-point set on the line `then pos Member = 8 at InputRec`, which is highlighted in red reverse-video. The window is divided into several panes: a command pane at the top left, a main display pane in the center, a work area pane at the bottom right, and a status bar at the bottom. The command pane shows the command `StepInto` and the current position `Pos INPUTREC (WorkArea POS 1001)`. The main display pane shows the SYSIN statement with the break-point set on the line `then pos Member = 8 at InputRec`. The work area pane shows the current position `Pos INPUTREC (WorkArea POS 1001)` and the current statement `then pos Member = 8 at InputRec`. The status bar at the bottom shows the current position `Pos INPUTREC (WorkArea POS 1001)` and the current statement `then pos Member = 8 at InputRec`.

```

-Pos INPUTREC (WorkArea POS 1001)
Command>
1 7C7C7C09 D5C4C5E7 0010010F 01230042
17 0115028F 0117191F 1642095E 00010000
33 D5C2D140 40404040 40404040 40404040
49 40404040 40404040 40404040 40404040
65 40404040 40404040 40404040 40404040
81 40404040 40404040 40404040 40404040
97 40404040 40404040 40404040 40404040

-USER123.SELCDBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) 80 F PDSE Size=4-+
Command>
000032 ==SelectMember==
000033 if pos InputRec = 'ZZSI'
000034 or pos InputRec = 'ZZSS'
000035 then pos Member = 8 at InputRec
000036 else flag eomemb * Indicate End-Of-Member.
000037
000038 return
000039
000040 ==SetMember==
000041 if pos Member = '
000042 then pos OutputRec = '
000043 else pos OutputRec = 8 at Member
000044 then write OUTFILE from '
000045 then write OUTFILE from 'Member RecNo ***'
000046 then write OUTFILE from '-----'
000047 pos Member = '
000048
000049 return
000050 *** End of File ***

-USER123.SELCOPY.SYSIN.SYSPRINT 133 U SEQ Size=67 Alt=
Command>
000058 15. else pos OutputRec = 8 at Member
000059 16. then write OUTFILE from '
000060 17. then write OUTFILE from 'Member RecNo ***'
000061 18. then write OUTFILE from '-----'
000062
000063 19. pos Member = '
000064
000065 20. return
000066
000067
000068 *** End of File ***

Work Area
Command>
1 40404040 40404040
9 40404040 40404040
17 40404040 40404040
25 40404040 40404040
33 40404040 40404040
41 40404040 40404040
49 40404040 40404040
57 40404040 40404040

s1=StepOver s2=StepInto s3=Go s4=Popup s5=MrkBox s6=MrkLine s7=BreakPt s8=BoxFuncs s9=UNDO s11=REDO
s12=ResetBox
Te Line=35 Col=15 Alt=0,0;0 Size=49 Rec1=80 Fmt=F Files=4 Views=4 2017/08/03 10:17:46
  
```

Figure 163. 17 SELCOPY/debug Windowed

## WATCH List (1)

- With one or more break-points set, you may now perform the **GO** operation using any of the following methods:
  1. Select the **Go** item from the main menu-bar at the top of the screen.
  2. Type the primary command **GO**.
  3. Press function key **Shift-F3 (F15)**.
- **GO** causes the debugger to run through the SELCOPY control statements (without pausing on each one) up until the next logically encountered break-point.
- Having hit our break-point, we are about to save our current library member name at the work-area position referred to as **MEMBER** (which is a symbolic name (EQUate) for **1**).
- The **WATCH List** window allows us to monitor multiple variables and work-area locations without opening a separate storage window for each one.
- To watch the **MEMBER** field:
  1. Place your cursor on any occurrence of the word "Member" within the control statements.
  2. Press **Shift-F4** to display the **popup** menu.
  3. Select item **Watch Pos "Member"** to display the WATCH panel (shown below).
  4. Update the **Length>** field to **8**.
  5. Update the **Data-Type>** field to **CHA**.
  6. Press **ENTER** to display the item in the Watch List, or press **F1** for help.

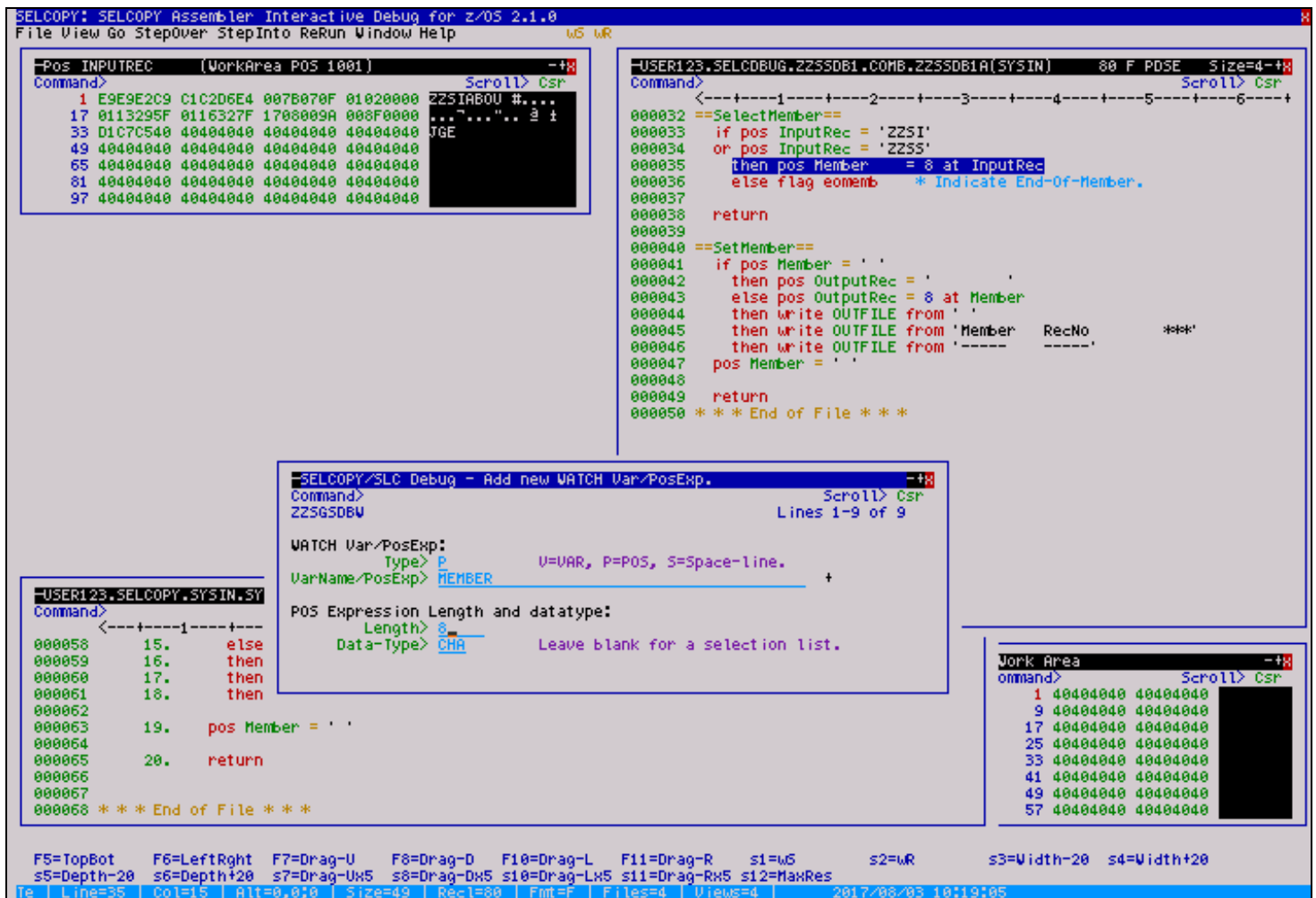


Figure 164. 18 SELCOPY/debug Windowed

## WATCH List (2)

- The **WATCH List** window will open in its initial default location.

But note that focus will not automatically be placed on it, and if your **SYSIN** window is placed as suggested below, then it may completely obscure the new **WATCH** window.

In this case, use the **WINDOW key (F4)** to scroll through your open windows until you find it.

Then move the new **WATCH** window so it is visible, as shown below.

- Next press **Shift-F1** to step-over the statement

```
then pos Member = 8 at InputRec
```

- The **WATCH List** window will automatically update to reflect the value **"ZZSIABOU"** for item **P\_MEMBER**.
- Press **F1** for further information on the Watch-List window, including supported **primary-** and **line-commands** e.g.
  - ♦ Line-command **"I"** to insert a new watch item.  
An alternative to using the popup method.
  - ♦ Line-command **"SC"** to display a **scale** for the current value.
  - ♦ Line-command **"SP"** to add a **space** line which is useful to visually separate groups of watched items.
  - ♦ Line-command **"PW"** to open a separate **storage-window** for the watched item (P\_xxxx).

This is particularly useful if you ever need to modify the value, which is not supported directly through the Watch-List itself.

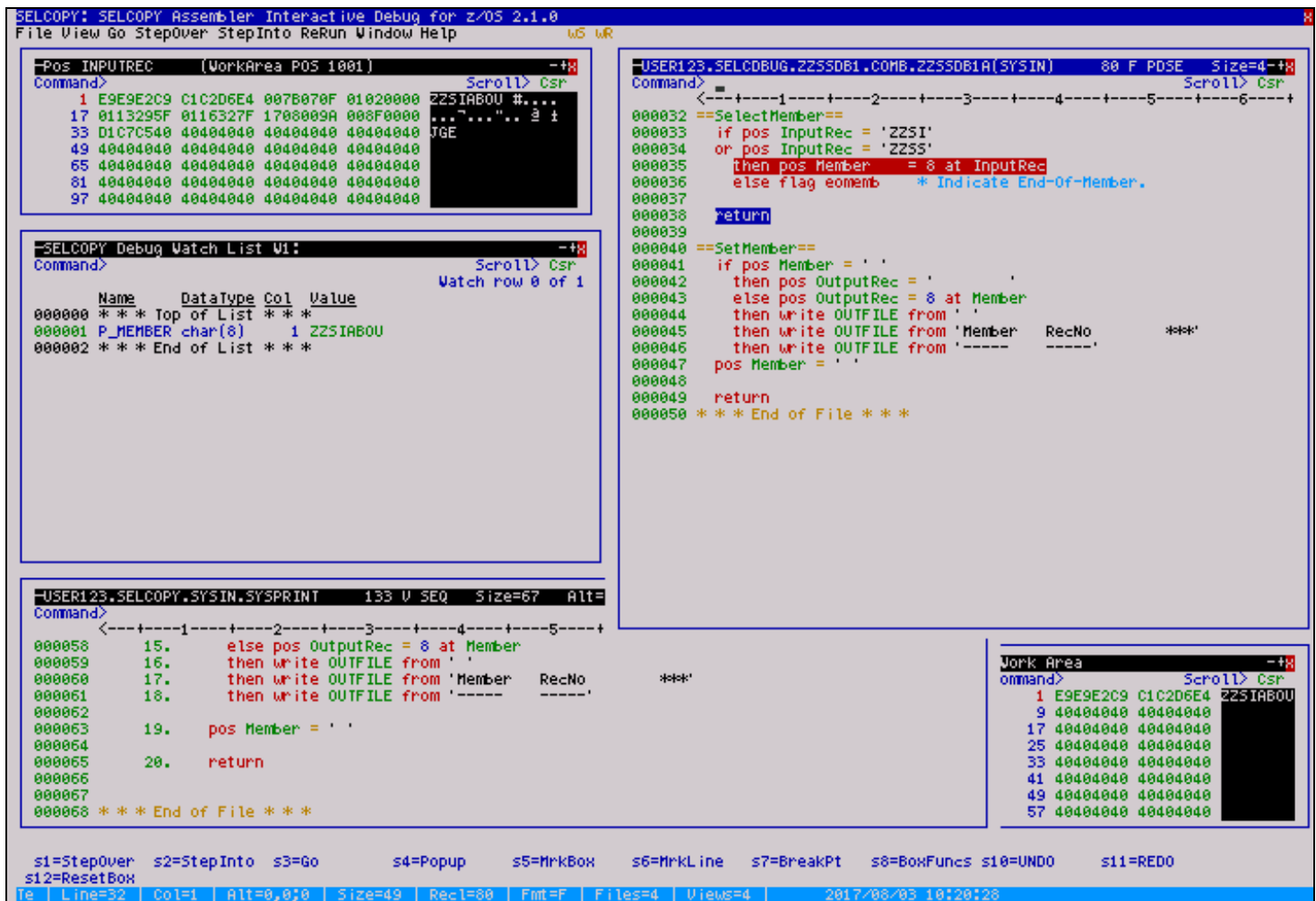


Figure 165. 19 SELCOPY/debug Windowed

## Setting a second run BREAK point

- Use **StepOver** function a few more times to trace through the statements executed following location of a member within the required name range.

The next records read from **HELPLIB** will be **DATA** (not **DIRectory** records), so processing will continue with the **IF/OR** tests (starting on line 20) to determine the presence of the string "<A" (in either upper- or lower-case).

- Once again, for debugging purposes, we are not interested in any data record that doesn't contain a **hyper-link**, so it's sensible to set another **break-point** on the **"THEN"** statement following this condition (line 21).
- Place your cursor anywhere within the **SYSIN** statement ...

```
then if pos @,InputRec+Lrecl-1 = '>'      ptr=@END
```

... then press **Shift-F7 (F19)** to set the break-point. which again will be highlighted in **red reverse-video**.

- Press the **"GO"** function key **Shift-F3 (F15)** to run to the next break-point.

The screenshot shows the SELCOPY Interactive Debug interface with the following panels:

- Top Left Panel (Memory Dump):** Displays data from 'Pos INPUTREC (WorkArea POS 1001)'. It shows a list of hexadecimal values and their corresponding ASCII representations, including comments like 'block beg -->' and 'JGE'.
- Bottom Left Panel (Watch List):** Titled '-SELCOPY Debug Watch List V1:'. It shows a table with columns for Name, DataType, Col, and Value. The list includes 'Top of List', 'P\_MEMBER char(8)' with value '1 ZZSIABOU', and 'End of List'.
- Top Right Panel (Source Code):** Displays the source code for 'USER123.SELCOBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN)'. A break point is set on line 000021, which is highlighted in red reverse-video: 'then if pos @,InputRec+Lrecl-1 = '>' ptr=@END'. The code includes logic for reading HELPLIB, selecting members, and processing data records.
- Bottom Left Panel (Source Code):** Displays the source code for 'USER123.SELCOPY.SYSIN.SYSPRINT'. It shows a loop that processes members, writing output to a file and returning when the end of the file is reached.
- Bottom Right Panel (Work Area):** Titled 'Work Area', it shows a list of hexadecimal values and their corresponding ASCII representations, including the value 'ZZSIABOU'.

The status bar at the bottom indicates the current state: 's1=StepOver s2=StepInto s3=Go s4=Popup s5=MrkBox s6=MrkLine s7=BreakPt s8=BoxFuncs s10=UNDO s11=REDO'. It also shows the current file, line, column, and other debug parameters.

Figure 166. 20 SELCOPY/debug Windowed

## Tracking a @xxx "pointer" location (1)

- The storage-window for "Pos INPUTREC" will now display the first input data record containing a **hyper-link**.

Note that the first 4-bytes of the record are occupied by the **record descriptor word (RDW)** prefix to all records read from Physical Sequential (**DSORG=PS**) files defined as containing variable length (**RECFM=V**) records.

SELCOPY's inclusion of the RDW within the input record may be controlled using the **RDW/NORDW** options.

- Although in this particular case it's not too difficult to spot the position of the "<a" string within the input record, a visual highlight of the location can often be extremely useful.

Since it has already been determined by SELCOPY at this point, the location is referrable using the default "@" pointer variable (automatically set by a positional range-test).

- Place your cursor on the "@" symbol (on line 21 of control statements) then press **Shift-F4** to display the **popup** menu.

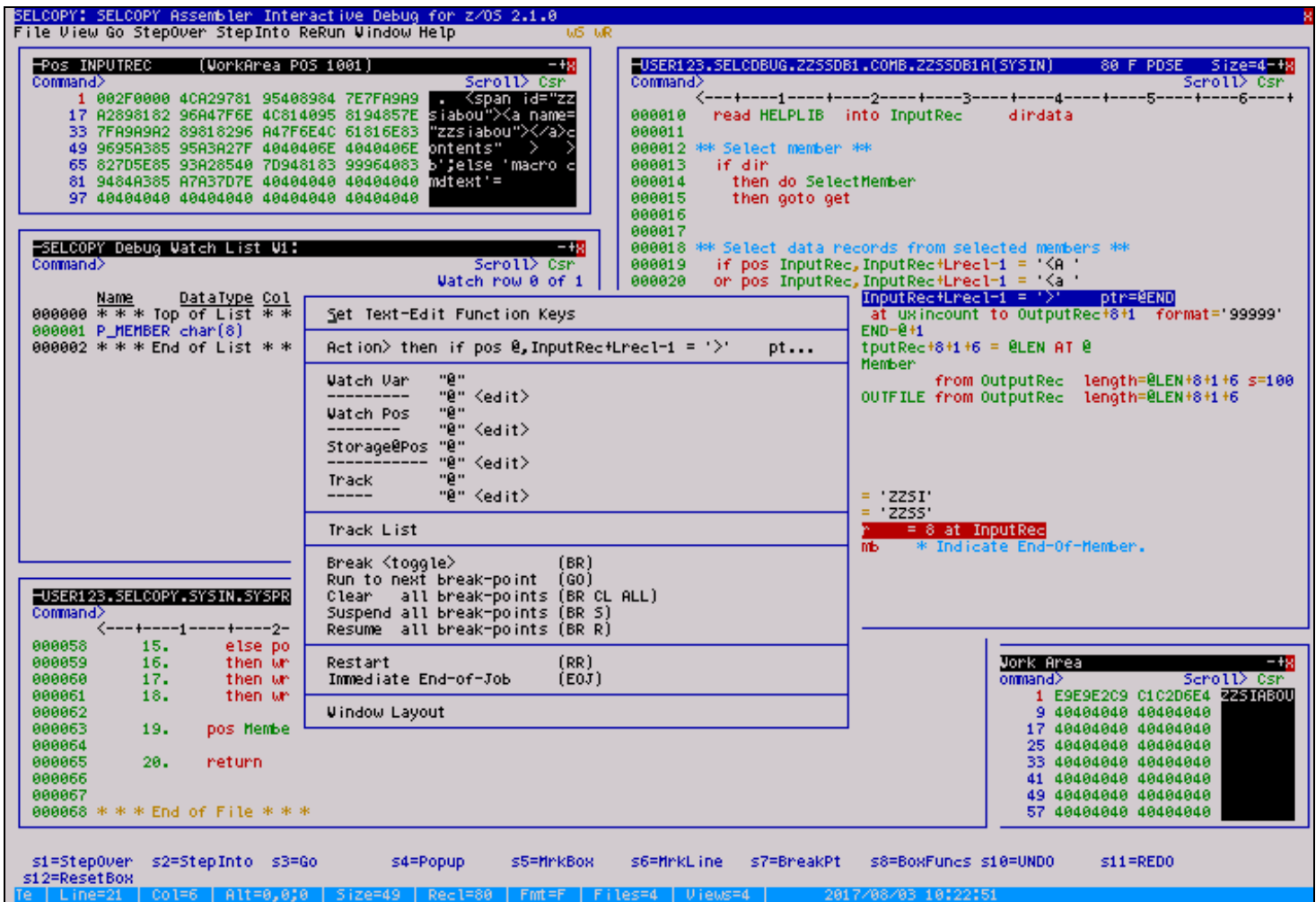


Figure 167.21 SELCOPY/debug Windowed

## Tracking a @xxx "pointer" location (2)

- From the popup menu, select item **Track "@"** to display a selectable highlight colour list.

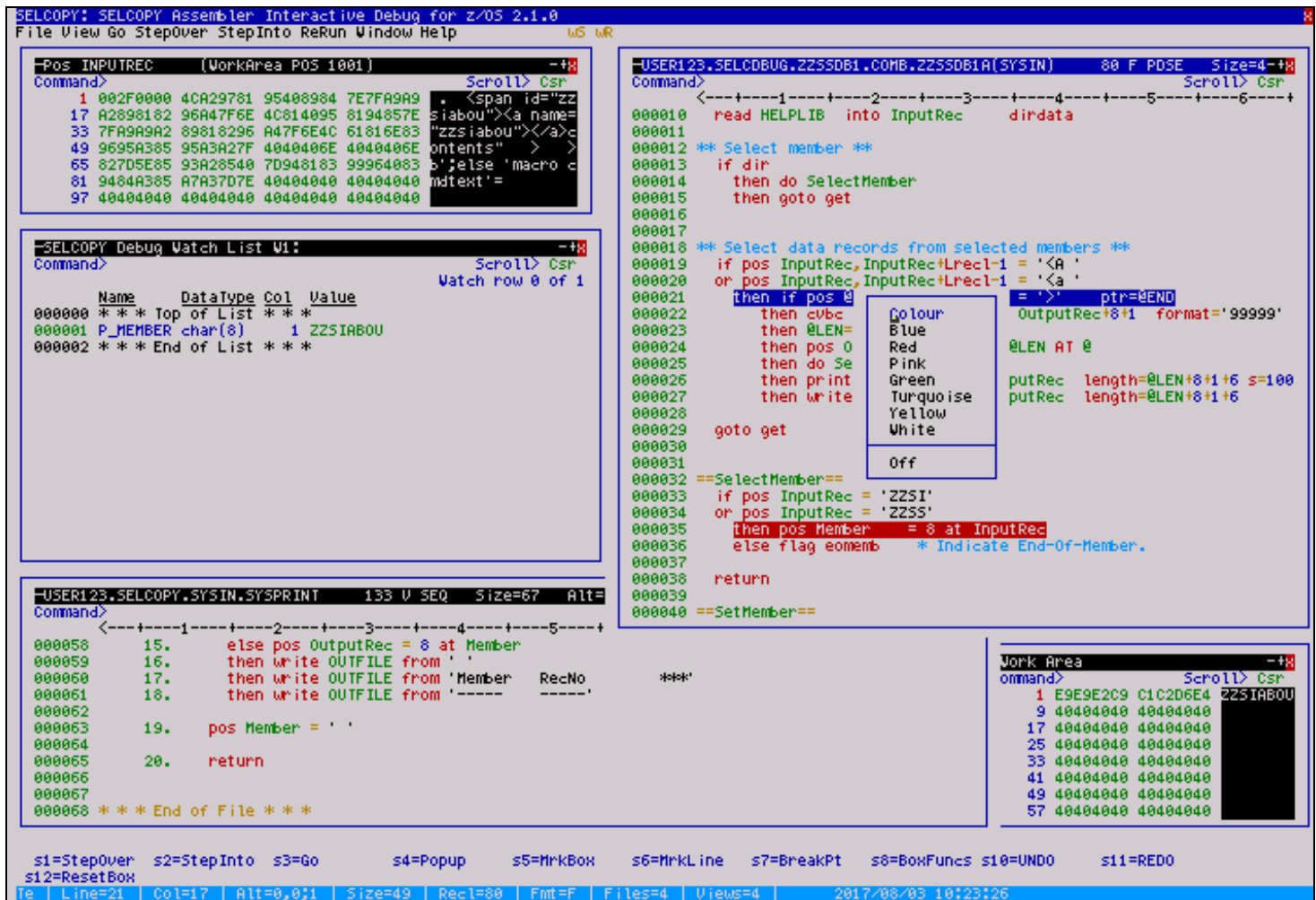


Figure 168. 22 SELCOPY/debug Windowed



## Adding further WATCH list items (1)

- Select **Green** from the list of colours.

The location of the pointer variable @ will now be highlighted in **green reverse-video**.

Hilighting of tracked locations is applied to all storage windows.

Select **"Track List"** from the popup menu at any time if you need a reminder of your tracked items and their respective colours.

- The next statement determines the presence of the closing tag (">") and explicitly sets pointer variable @END to its location. Use the above technique again to track @END in **PINK**.
- Other positional expressions may also be tracked. Use the above technique once more to track **InputRec+Lrecl-1** in **RED**.

This mark will make it clear where the current input record ends, all data beyond being residue from previous records that still remains in the work area.

- Next we start to construct our output record.  
Line 22 of the control statements converts a 4-byte binary field (at pos **UXINCOUNT**) to numeric character at an offset within the output record (**OUTPUTREC+8+1**).

We'll monitor the construction of our output record by adding a WATCH item.

1. Place your cursor on any occurrence of the word **"OutputRec"** within the control statements.
2. Press **Shift-F4** to display the **popup** menu.
3. Select item **Watch Pos "OutputRec"** to display the WATCH panel.
4. Update the **Length** field to **100**.
5. Leave the **Data-Type** field as **CHA**.
6. Press **ENTER** to add the item to the existing Watch List.

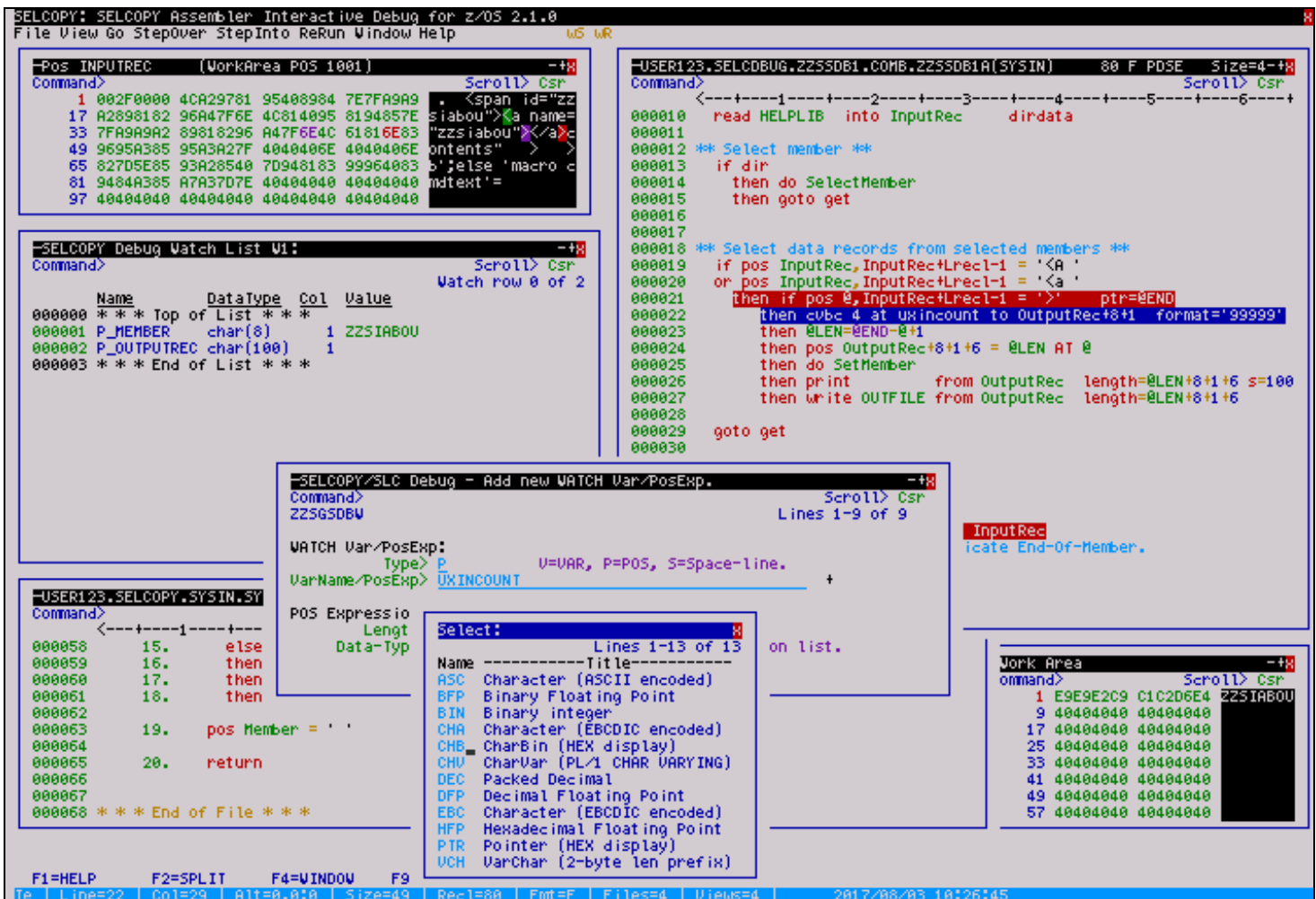


Figure 169. 22 SELCOPY/debug Windowed

## Adding further WATCH list items (2)

- Repeat the previous technique to watch position **UXINCOUNT**, which is SELCOPY's internally maintained input record (4-byte binary) number.

For this item we'll select to display it using **hexadecimal** representation.

- Blank out the **Data-Type>** field and press **ENTER**.
- Select item **CHB** from the list

Alternatively we might choose to interpret the field as **BIN (Binary Integer)**.

- The next statement sets a numeric variable **@LEN**.

To watch the numeric value of **@LEN**:

- Place your cursor on any occurrence of the word **"@LEN"** within the control statements.
- Press **Shift-F4** to display the **popup** menu.
- Select item **Watch Var "@LEN"** to display the **WATCH** panel.
- Both the **Length>** and **Data-Type>** fields are ignored for **Type> V (V=VAR)** watch list items so just press **ENTER** to add the item to the Watch List.

- Items may also be added to the **Watch List** using a **command line interface**.

Type **"HELP WATCH"** for full information.

```

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0
File View Go StepOver StepInto ReRun Window Help

-Pos INPUTREC (WorkArea POS 1001)
Command>
1 002F0000 40A29781 95408984 7E7FA9A9 . <span id="zz
17 A2898182 96A47F6E 4C814895 8194857E siabou"><a name=
33 7FA9A9A2 89818296 A47F6E4C 61816E83 "zzsiabou"></a>c
49 9695A385 95A3A27F 4040406E 4040406E ontents" > >
65 827D5E85 93A28540 7D948183 99964083 b';else 'macro c
81 9484A385 A7A37D7E 40404040 40404040 mdtext' =
97 40404040 40404040 40404040 40404040

-USER123.SELCDBUG.ZZ55DB1.COMB.ZZ55DB1A(SYSIN) 80 F PDSE Size=4-+X
Command>
<-----1-----2-----3-----4-----5-----6-----+
000010 read HELPLIB into InputRec dirdata
000011
000012 ** Select member **
000013 if dir
000014 then do SelectMember
000015 then goto get
000016
000017
000018 ** Select data records from selected members **
000019 if pos InputRec,InputRec+Lrec1-1 = '<A '
000020 or pos InputRec,InputRec+Lrec1-1 = '<a '
000021 then if pos @,InputRec+Lrec1-1 = '>' ptr=@END
000022 then cbbc 4 at UXincount to OutputRec+8+1 format='99999'
000023 then @LEN=@END-@+1
000024 then pos OutputRec+8+1+6 = @LEN AT @
000025 then do SetMember
000026 then print from OutputRec length=@LEN+8+1+6 s=100
000027 then write OUTFILE from OutputRec length=@LEN+8+1+6
000028
000029 goto get
000030
000031
000032 ==SelectMember==
000033 if pos InputRec = 'ZZSI'
000034 or pos InputRec = 'ZZSS'
000035 then pos Member = 8 at InputRec
000036 else flag eomemb * Indicate End-Of-Member.
000037
000038 return
000039
000040 ==SetMember==

-SELCOPY Debug Watch List UI:
Command>
Name DataType Col Value
000000 * * * Top of List * * *
000001 P_MEMBER char(8) 1 ZZSIABOU
000002 P_OUTPUTREC char(100) 10 00049 <a name="zzsiabou">
000003 P_UXINCOUNT char(4) 1 00000031
000004 @LEN bin(4) 19
000005 * * * End of List * * *

-USER123.SELCOPY.SYSIN.SYSPRINT 133 V SEQ Size=67 Alt=
Command>
<-----1-----2-----3-----4-----5-----+
000058 15. else pos OutputRec = 8 at Member
000059 16. then write OUTFILE from ' '
000060 17. then write OUTFILE from 'Member RecNo ***'
000061 18. then write OUTFILE from '-----'
000062
000063 19. pos Member = ' '
000064
000065 20. return
000066
000067
000068 * * * End of File * * *

Work Area
ommand>
1 E9E9E2C9 C1C2D6E4 ZZSIABOU
9 40404040 40404040
17 40404040 40404040
25 40404040 40404040
33 40404040 40404040
41 40404040 40404040
49 40404040 40404040
57 40404040 40404040

s1=StepOver s2=StepInto s3=Go s4=POSWIN s5=DELETE s6=INSERT s7=SCALE s8=SPACE
Te Line=23 Col=15 Alt=0,0;0 Size=49 Rec1=80 Fmt=F Files=4 Views=4 2017/08/03 10:28:07
  
```

Figure 170. 23 SELCOPY/debug Windowed



## Adding further WATCH list items (3)

- Use the **StepInto** operation to trace through the sub-routine **SetMember** which ensures that the member name is included in the output record for the first hit within each member only.

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0  
File View Go StepOver StepInto ReRun Window Help

Pos INPUTREC (WorkArea POS 1001)

```

Command>
1 002F0000 4CA29781 95408984 7E7FA9A9 . <span id="zz
17 A2898182 96A47F6E 4C814895 8194857E siabou">a name=
33 7FA9A9A2 89818296 A47F6E4C 61816E83 "zzsiabou"</a>c
49 9695A385 95A3A27F 4040406E 4040406E ontents" > >
65 827D5E85 93A28540 7D948183 99964083 b';else 'macro c
81 9484A385 A7A37D7E 40404040 40404040 mdtext' =
97 40404040 40404040 40404040 40404040

```

USER123.SELCDBUG.ZZ55DB1.COMB.ZZ55DB1A(SYSIN) 80 F PDSE Size=4

```

Command>
000040 ==SetMember==
000041 if pos Member = '
000042 then pos OutputRec = '
000043 else pos OutputRec = 8 at Member
000044 then write OUTFILE from '
000045 then write OUTFILE from 'Member RecNo ***'
000046 then write OUTFILE from '-----'
000047 pos Member = '
000048
000049 *return
000050 *** End of File ***

```

Debug Watch List V1

Name	Data Type	Col	Value
*** Top of List ***			
P_MEMBER	char(8)	1	Z5IABOU
P_OUTPUTREC	char(100)	1	Z5IABOU 00049 <a name="zz
P_UXINCOUNT	char(4)	1	00000031
QLEN	bin(4)		19
*** End of List ***			

USER123.SELCOPY.SYSIN.SYSPRINT 133 U SEQ Size=67 Alt=

```

Command>
000058 15. else pos OutputRec = 8 at Member
000059 16. then write OUTFILE from '
000060 17. then write OUTFILE from 'Member RecNo ***'
000061 18. then write OUTFILE from '-----'
000062
000063 19. pos Member = '
000064
000065 20. return
000066
000067
000068 *** End of File ***

```

Work Area

Command>	Scroll>	Csr
1	40E9E2C9	C1C2D6E4
9	40404040	40404040
17	40404040	40404040
25	40404040	40404040
33	40404040	40404040
41	40404040	40404040
49	40404040	40404040
57	40404040	40404040

s1=StepOver s2=StepInto s3=Go s4=Popup s5=MrkBox s6=MrkLine s7=BreakPt s8=BoxFuncs s10=UNDO s11=REDO  
s12=ResetBox  
Te Line=40 Col=1 Alt=0,0;0 Size=49 Rec1=80 Fmt=F Files=4 Views=4 2017/08/03 10:30:21

Figure 171.24 SELCOPY/debug Windowed

## The SYSPRINT window

- Continue stepping through and past the **PRINT** statement on **line 26**.
- The **SYSPRINT** window will **automatically update** to display the printed output.

The screenshot displays the SELCOPY Interactive Debug for z/OS 2.1.0 interface. It features several windows:

- Main Command Window:** Shows assembly code with addresses and hex values. The command prompt is at the top.
- Watch List Window:** Displays a table of watched variables.
 

Name	Data Type	Col	Value
*** Top of List ***			
P_MEMBER	char(8)	1	ZSIABOU
P_OUTPUTREC	char(100)	1	ZSIABOU 00049 <a name="zz
P_UXINCOUNT	char(4)	1	00000031
LEN	bin(4)		19
*** End of List ***			
- SYSPRINT Window:** Displays the output of the PRINT statement. It shows a table with columns for INPUT, RECNO, TOT, ID, and seven data columns. The output shows a record with ID 49 and value 8.
 

INPUT	RECNO	TOT	ID	1	2	3	4	5	6	7
49	1	8	ZSIABOU	00049	<a name="zzsiabou">					
- Work Area Window:** Shows a list of memory addresses and their corresponding hex values.

At the bottom, there is a status bar with various function keys: s1=StepOver, s2=StepInto, s3=Go, s4=Popup, s5=MrkBox, s6=MrkLine, s7=BreakPt, s8=BoxFuncs, s10=UNDO, s11=REDO.

Figure 172. 25 SELCOPY/debug Windowed

## Suspend/Resume all Break-Points

- Next remove each existing break point using the toggle key **Shift-F7**.
- Alternatively,
  - ◆ Type "**B**reak **ALL OFF**" to remove all existing break points at once.
  - ◆ Type "**B**reak **SUSPENDALL**" to suspend all existing break points.
  - ◆ Type "**B**reak **RESUMEALL**" to reinstate all suspended break points.
- With all other breaks removed or suspended add a new break on **line 27** (i.e. after execution of the PRINT statement).
- Now press the **GO** key (Shift-F3) repeatedly to see how the process progresses.

The SYSPRINT window should update after each GO operation.

- The screen shot below was recorded with "**HILITE OFF**" in effect (to remove syntax highlighting for the SELCOPY language)

... making it much clearer to see that:

- ◆ Pos expression "InputRec+Lrecl-1" is tracked in **red**.
- ◆ Pos expression "@" is tracked in **green**.
- ◆ Pos expression "@END" is tracked in **pink**.

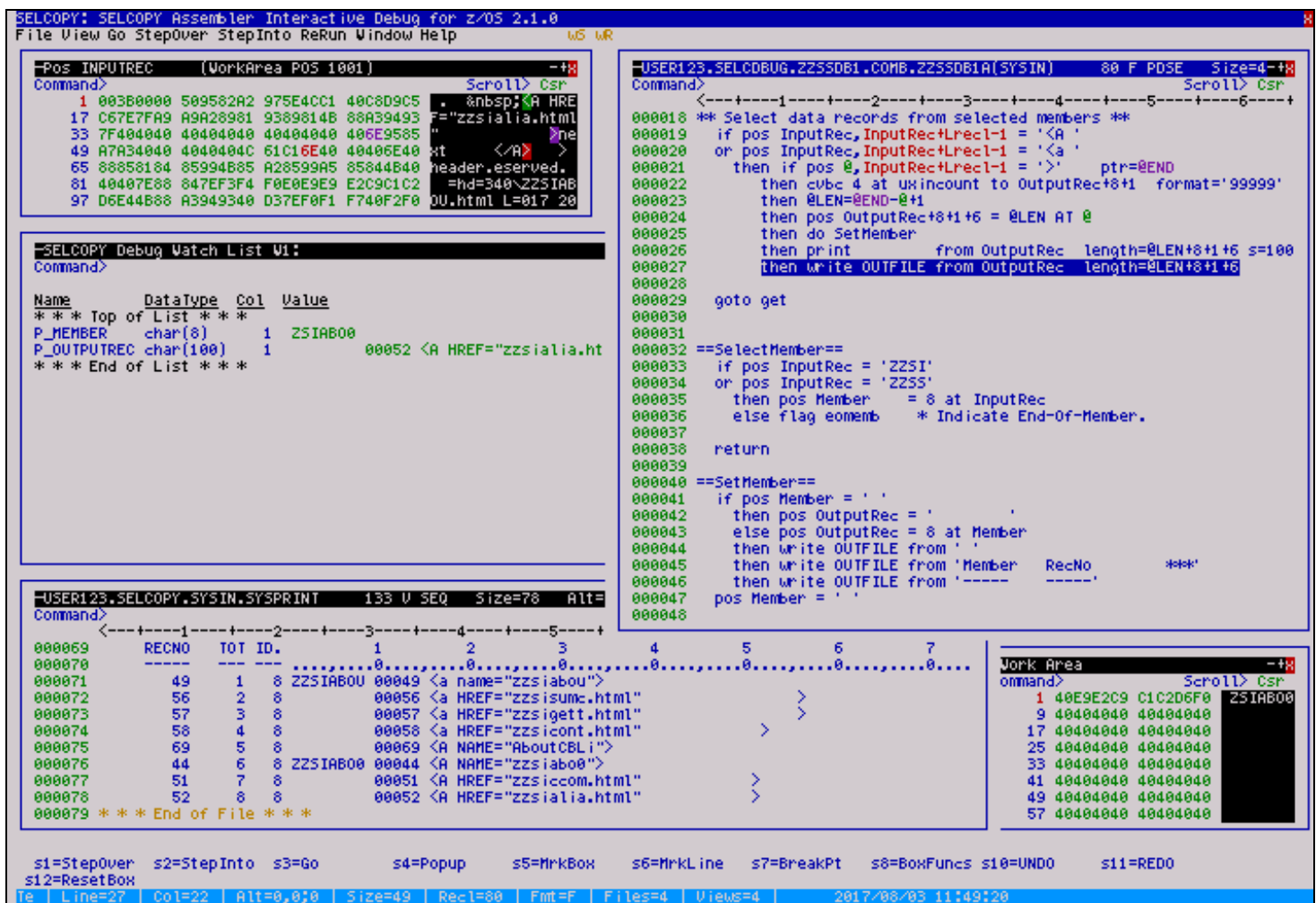


Figure 173. 26 SELCOPY/debug Windowed

## WATCH List Options

- In order to optimise the visible area of your watch list window, you may wish to move its **prefix area** to the right and reduce its **width** to 2-characters.

Type **"PREFIX RIGHT 2" (PREF R 2)** from the command-line of the WATCH list window to do this.

- Type **"HELP SET" (H S)** from the command-line of the WATCH list window for more information on its customisable aspects.

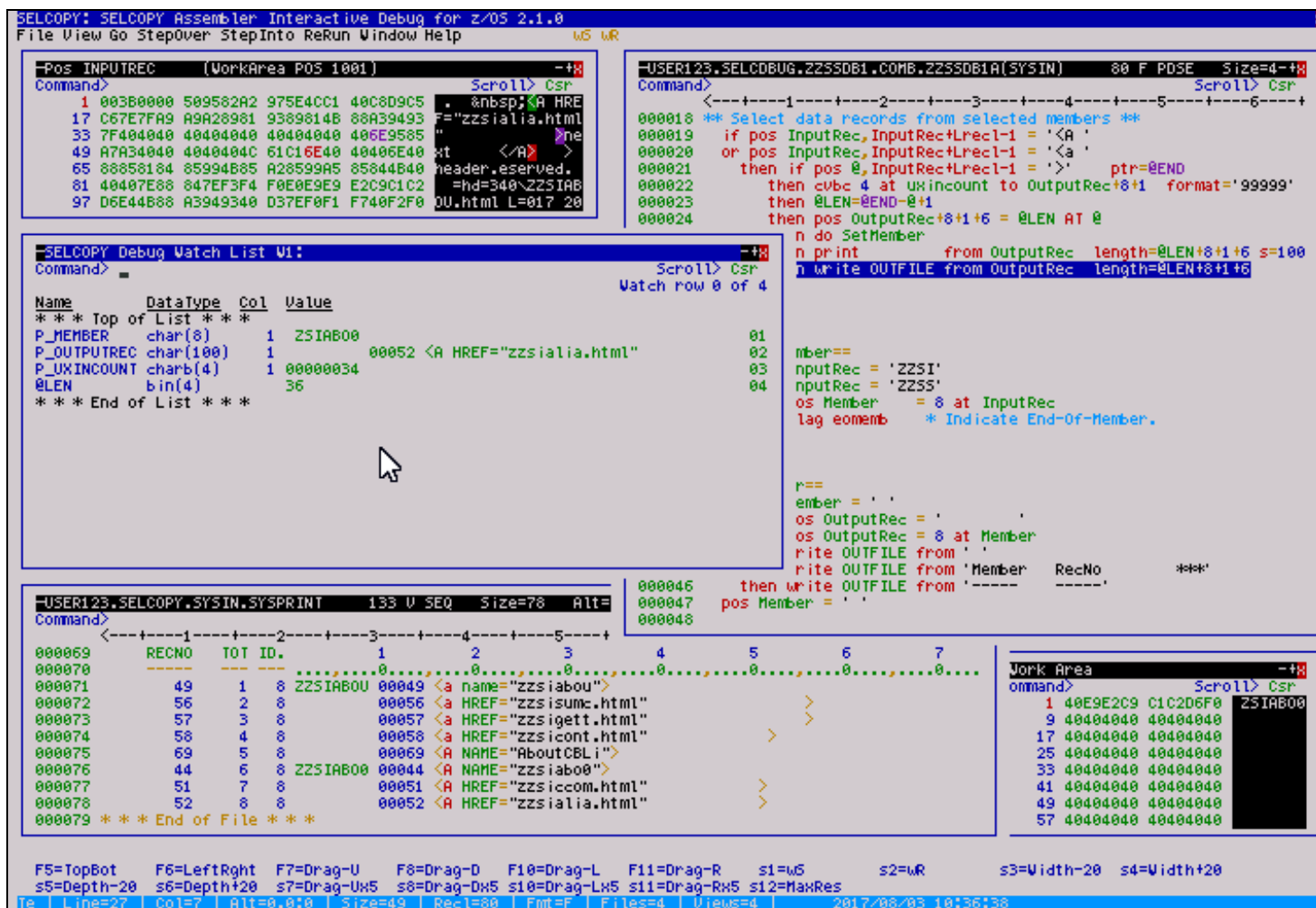


Figure 174. 27 SELCOPY/debug Windowed

## Automatic BREAKIN threshold

- Next remove your last existing break point using the toggle key Shift-F7, then press the **GO** key (Shift-F3) with the intention of running to end-of job.
- Once all break points are removed, or the logic of your SELCOPY determines that none are actually hit, then to guard against infinite loops or unintentionally excessive I/O, the debugger will automatically break in after a certain number of statements have been processed.
- The default is 10,000 statements, but this may be overridden by typing **"SET BREAKIN nnn"** from the command-line of the SYSIN window.

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0  
File View Go Stepper Stepinto ReRun Window Help

Pos INPUTREC (WorkArea POS 1001)  
Command>

```

1 003B0000 509582A2 975E40C1 40C8D9C5 . &nbsp;&nbsp;&A HRE
17 C67E7FA9 A9A28961 93898148 88A39493 F="zzsialia.html
33 7F404040 40404040 40404040 406E9585 "
49 A7A34040 40404040 61C16E40 40406E40 xt </A> >
65 88858184 85994B85 A28599A5 85844B40 header.eserved.
81 40407E88 847EF3F4 F0E0E9E9 E2C9C1C2 =hd=340\Z25IAB
97 D6E44B88 A3949340 D37EF0F1 F740F2F0 OU.html L=017 20
  
```

SELCOPY Debug Watch List V1:  
Command>

Name	Data Type	Col	Value
*** Top of List ***			
P_MEMBER	char(8)	1	Z25IAB00
P_OUTPUTREC	char(100)	1	00052 <A HREF="zzsialia.ht
P_UXINCOUNT	char(4)	1	00000034
LEN	bin(4)	1	36
*** End of List ***			

SELCOBUG.Z2550B1.COMB.Z2550B1A(SYSIN) 80 F PDSE Size=4-+  
Command>

```

000018 ** Select data records from selected members **
000019 if pos InputRec,InputRec+Lrec1-1 = '<A '
000020 or pos InputRec,InputRec+Lrec1-1 = '<a '
000021 then if pos @,InputRec+Lrec1-1 = '>' ptr=@END
000022 then cvbc 4 at uxincount to OutputRec+8+1 format='99999'
000023 then LEN=END-@+1
000024 then pos OutputRec+8+1+6 = @LEN AT @
000025 then do SetMember
000026 then print from OutputRec length=@LEN+8+1+6 s=100
000027 then write OUTFILE from OutputRec length=@LEN+8+1+6
000028 goto get
000029
000030
000031
000032 ==SelectMember==
  
```

at InputRec  
Indicate End-Of-Member.

SELCOBUG.Z2550B1.COMB.Z2550B1A(SYSIN) 133 U SEQ Size=78 Alt=  
Command>

```

000069 RECNO TOT ID. 1 2 3 4 5 6 7
000070 49 1 8 Z25IAB00 00049 <a name="zzsialiou">
000071 56 2 8 00056 <a HREF="zzsisumc.html"
000072 57 3 8 00057 <a HREF="zzsigett.html"
000073 58 4 8 00058 <a HREF="zzsicont.html"
000074 59 5 8 00059 <a NAME="AboutCBLi">
000075 44 6 8 Z25IAB00 00044 <a NAME="zzsialiou">
000076 51 7 8 00051 <a HREF="zzsicom.html"
000077 52 8 8 00052 <a HREF="zzsialia.html"
000078 *** End of File ***
  
```

Work Area  
Command>

```

1 40E9E2C9 C1C2D6F0 Z25IAB00
9 40404040 40404040
17 40404040 40404040
25 40404040 40404040
33 40404040 40404040
41 40404040 40404040
49 40404040 40404040
57 40404040 40404040
  
```

F1=HELP F2=SPLIT F4=WINDOW F9=SWAP F12=RETRIEVE  
Te Line=27 Col=37 Alt=0,010 Size=49 Rec1=00 Fmt=F Files=4 Views=4 2017/08/03 10:38:18

Figure 175. 28 SELCOPY/debug Windowed

## EOJ/RERUN

- Once SELCOPY has reached **End-Of-Job** its run **statistics block** is displayed at the end of the SYSPRINT output.
- You may force early termination, and therefore display of the statistics block reflecting processing so far, by typing **"EOJ"** at any stage during the debug session.
- You may also restart your debug run from the beginning at any stage by typing **"RERUN (RR)"**.

Wherever possible **RERUN** will preserve all existing **BREAK** points, **WATCH** list items etc.

- You may modify and save your control statements at any time during the run, but if not already at **EOJ** then you will not be able to continue debugging without forcing a **RERUN**.
- Once SELCOPY has terminated, you may wish to examine one or more output files.

This can be done without leaving the debug environment, and since the SELCOPY selection summary usually contains the name of the output file required, you'll find it convenient to type **"DSN"** on the command-line then place your cursor on the dataset name before pressing **ENTER**.

See below.

```

SELCOPY: SELCOPY Assembler Interactive Debug for z/OS 2.1.0
File View Go Steppover Stepinto Rerun Window Help

-Pos INPUTREC (WorkArea POS 1001)
Command>

SELCOPY Debug Watch List V1:
Command>
Name      DataType  Col  Value
*** Top of List ***
P_MEMBER  char(8)   1    ZSSFINE
P_OUTPUTREC char(100) 1    00062 <A NAME="NestingofOp
P_UXINCOUNT char(4)   1    0000005C
@LEN      bin(4)    34
*** End of List ***

USER123.SELCOBUG.ZZSSDB1.COMB.ZZSSDB1A(SYSIN) 80 F PDSE Size=4-+
Command>
<-----1-----2-----3-----4-----5-----6-----+
000010 read HELPLIB into InputRec dirdata
000011
000012 ** Select member **
000013 if dir
000014 then do SelectMember
000015 then goto get
000016
000017
000018 ** Select data records from selected members **
000019 if pos InputRec,InputRec+Lrecl-1 = '<A '
000020 or pos InputRec,InputRec+Lrecl-1 = '<a '
000021 then if pos @,InputRec+Lrecl-1 = '>' ptr=@END
000022 then cvbc 4 at uxincount to OutputRec+8+1 format='99999'
000023 then @LEN=@END-@+1
000024 then pos OutputRec+8+1+6 = @LEN AT @
000025 then do SetMember
000026 then print from OutputRec length=@LEN+8+1+6 s=100
000027 then write OUTFILE from OutputRec length=@LEN+8+1+6
000028
000029 goto get
000030
000031
000032 ==SelectMember==
000033 if pos InputRec = 'ZZSI'
000034 or pos InputRec = 'ZZSS'
000035 then pos Member = 8 at InputRec
000036 else flag eomemb * Indicate End-Of-Member.
000037

USER123.SELCOPY.SYSIN.SYSPRINT 133 U SEQ Size=206 Alt=0,0;100
Command> dsn e
<-----1-----2-----3-----4-----5-----6-----7-----8-----9-----+
000186 SEL-ID SELTOT FILE BLKSIZE LRECL FSIZE CI DSN
000187 -----
000188 1 237,938 READ HELPLIB 27998 256 UB 2,415 CBL.INST.CBL17202.SZ2SH
000189 2---3 2,415
000190 4---7 17,451
000191 8 100
000192 9 17,451 WR OUTFILE 99 UB 20,652 USER123.ZZSSDB1.OUTPUT
000193 10 235,523
000194 11 1,069
000195 12 1,346
000196 13 2,415

s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO
s12=ResetBox
Te | Line=190 | Col=58 | Alt=0,0;100 | Size=206 | Recl=133 | Fmt=U | Files=4 | Views=4 | 2017/08/03 10:40:04
  
```

Figure 176. 29 SELCOPY/debug Windowed



## View Output file(s) from debug environment

The screenshot shows the SELCOPY Interactive Debug environment for z/OS 2.1.0. The main window displays assembly code for a file named USER123.ZZSS0B1.OUTPUT. The code is organized into sections separated by '\*\*\*' markers. The first section, starting at address 000001, defines a member 'Z25IABOU' with various attributes and a list of HTML links. The second section, starting at 000010, defines a member 'Z25IAB00' with similar attributes and links. The third section, starting at 000021, defines a member 'Z25IACIN' with attributes and a list of HTML links. The code ends at address 000043. On the right side, there is a command prompt window with the following text:

```

(SIN) 80 F PDSE Size=4-+
+---4---5---6---+
dirdata

ed members **
= '<A '
= '<a '
= '>' ptr=@END
OutputRec+8+1 format='99999'

@LEN AT @

putRec length=@LEN+8+1+6 s=100
putRec length=@LEN+8+1+6

tRec
End-Of-Member.

ork Area
mmand> Scroll> Csr

```

At the bottom of the window, there is a status bar with the following information:

```

s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine s7=SPLTJOIN s8=BoxFuncs s10=UNDO s11=REDO
s12=ResetBox
Te Line=1 Col=1 Alt=0,0,0 Size=20652 Recl=252 Fmt=U Files=5 Views=5 2017/08/03 10:41:09

```

Figure 177. 30 SELCOPY/debug Windowed

## Option 12 - DB2

---

**DB2 support** is included as a standard component of the SELCOPYi program. i.e. it is not a separately licensable product.

As well as browsing and editing DB2 tables, SELCOPYi provides tools to

- issue DB2 commands,
- execute SQL,
- list DB2 objects with extended functionality,
- create DB2 object (Tables, Indexes etc) using "wizard" style dialogs to generate SQL,

Focusing on table edit, during this section you will learn about:

- *Setting up sample DB2 Tables*
- *Display of DB2 Table detailed Information (INFO)*
- *DB2 Table Edit*
- *Editing selected table rows (using the "WHERE" dialog)*
- *Editing Related Tables (REDIT)*
- *Generating CSV, XML or JSON from selected table rows/columns*
- *Handling Relational Constraint Errors*



## Setting up sample DB2 Tables

SELCOPYi will create some sample DB2 Tables for you.

The table data will be copied from your own SELCOPYi sample datasets (See chapter "Setup Training Material" if you haven't created these) and represents a simple recorded music collection.

The sample database comprises a hierarchy of **Artist**, **Album** and **Track** table rows.

To create your own personal tables, allowing you to follow the training manual in real time, first select option 12 from the main SELCOPYi Primary Options Menu to display the **DB2 Primary Options Menu** as shown below.

If necessary fill in the name of the **DB2 Subsystem** and your **SQLID** in the enterable fields.

A further optional check box may be selected to request that SELCOPYi DB2 auditing should occur. Audit of DB2 table edit views is managed separately and is not affected by this check box setting. If **Create Audit File** is selected, an audit log file will be allocated immediately before attempting to connect to the DB2 subsystem and closed when the connection is dropped.

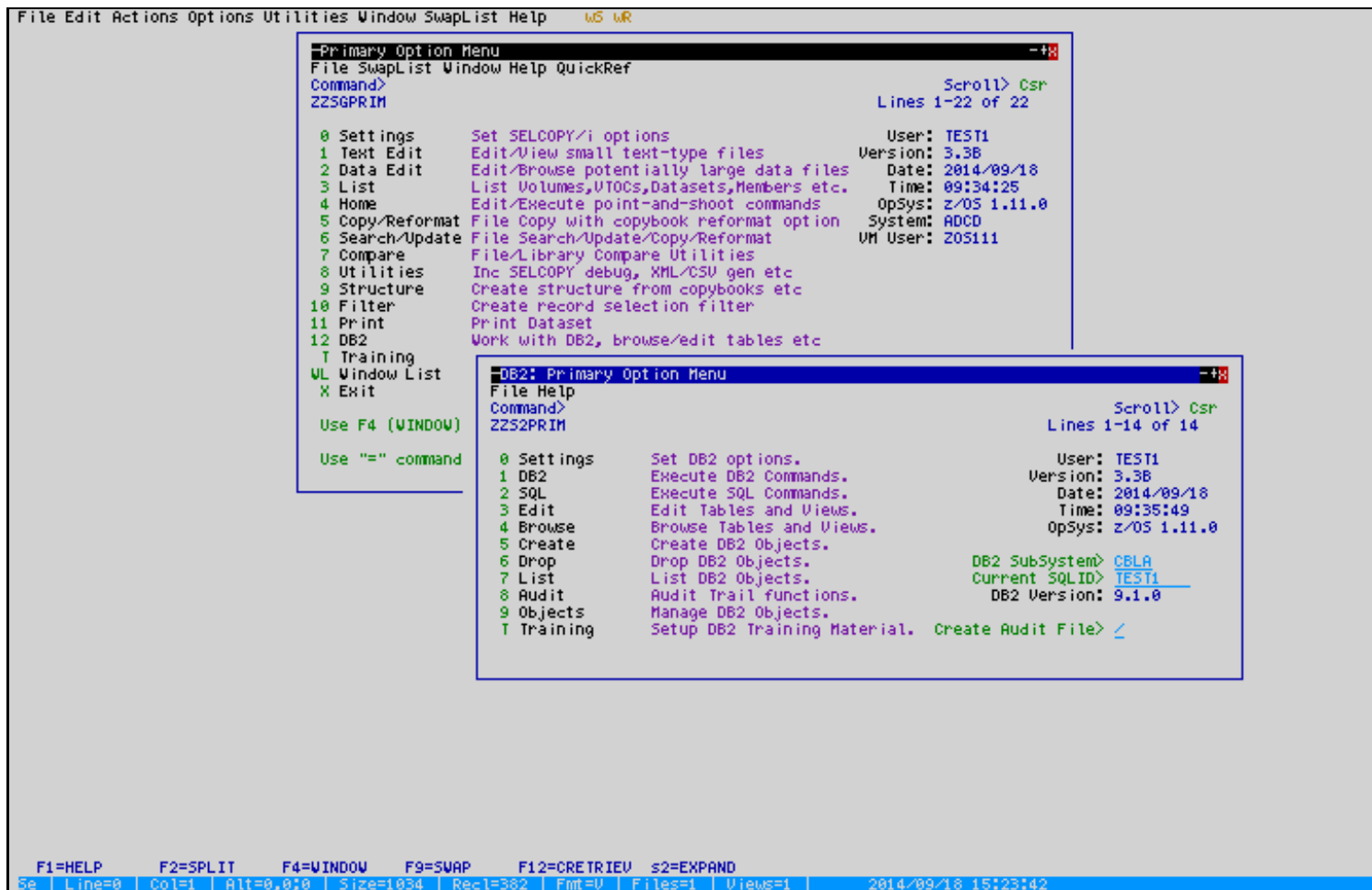


Figure 178. SELCOPYi DB2 Figure 01

## Setting up sample DB2 Tables (2)

- Select option **T - Setup DB2 Training Material.**

A new panel will be displayed as shown below.

- Enter the name of a DB2 Database in which you wish to create the sample tables.

This option defaults to your **current SQLID**.

If the database does not already exist, then it will be created using DB2 defaults and **CCSID EBCDIC**.

- Press **ENTER** to start the setup procedure.

While the setup is running you can expect the screen to update a few times, and for a number of messages to appear and disappear.

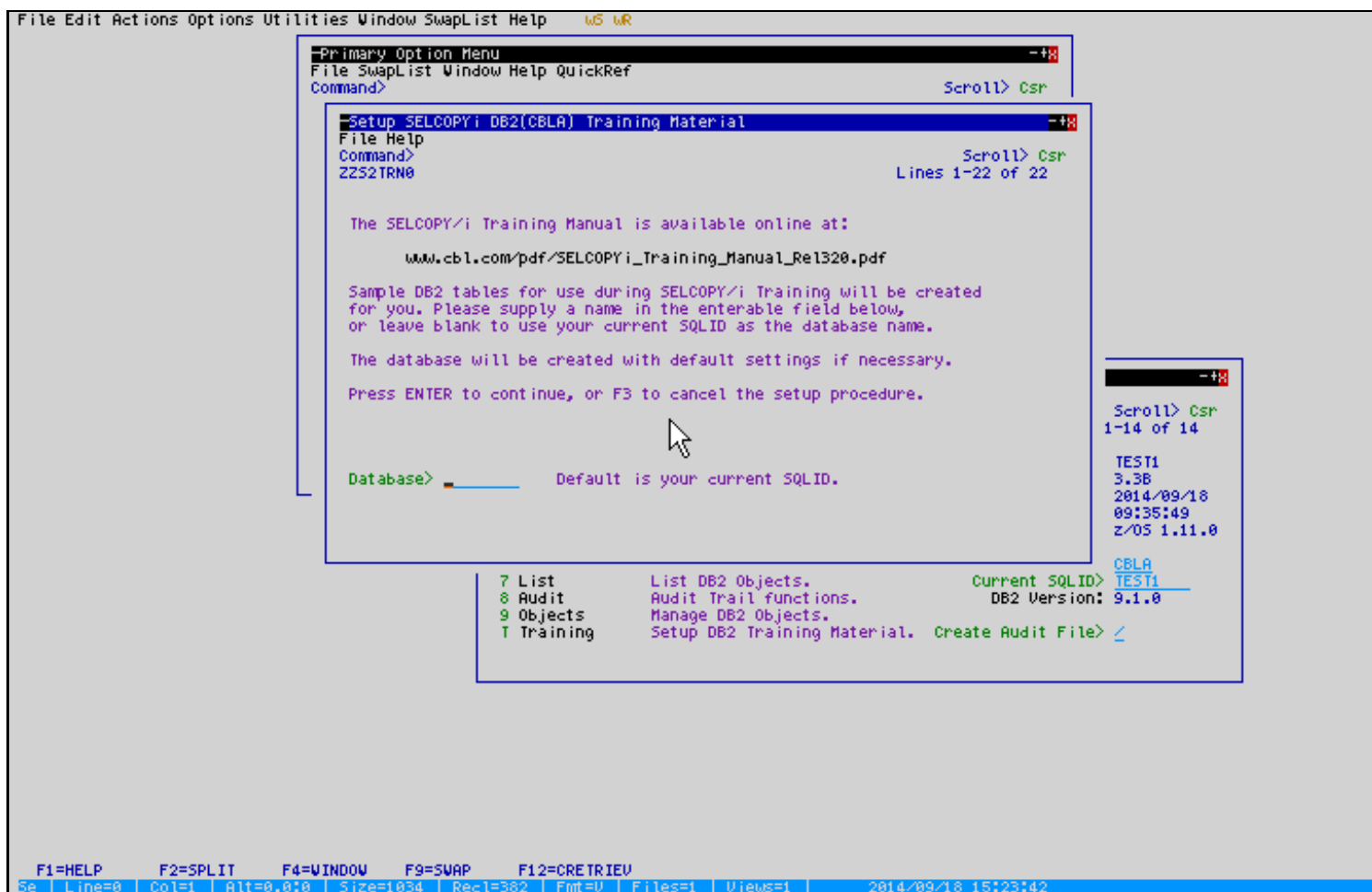


Figure 179. SELCOPYi DB2 Figure 02

- Eventually, provided no serious errors occur, you should expect to see the following message box.

```

SELCOPY/i DB2 Training - Initial Setup Complete                                x

The DB2 Training Material sample database and tables have been
successfully created.

Press PF3 to view the tables in a list window.

The SELCOPY/i Training Manual is available online at
www.cbl.com/pdf/SELCOPYi_3.40_Training_Manual.pdf

                                OK

```

Press **ENTER** or **F3** to continue.

## Setting up sample DB2 Tables (3)

- The sample tables will be displayed in a "List Tables" window, as shown below.
- "List" windows to display tables, and many other DB2 objects, may be opened by selecting **Option 7** from the DB2 Primary Options Menu.

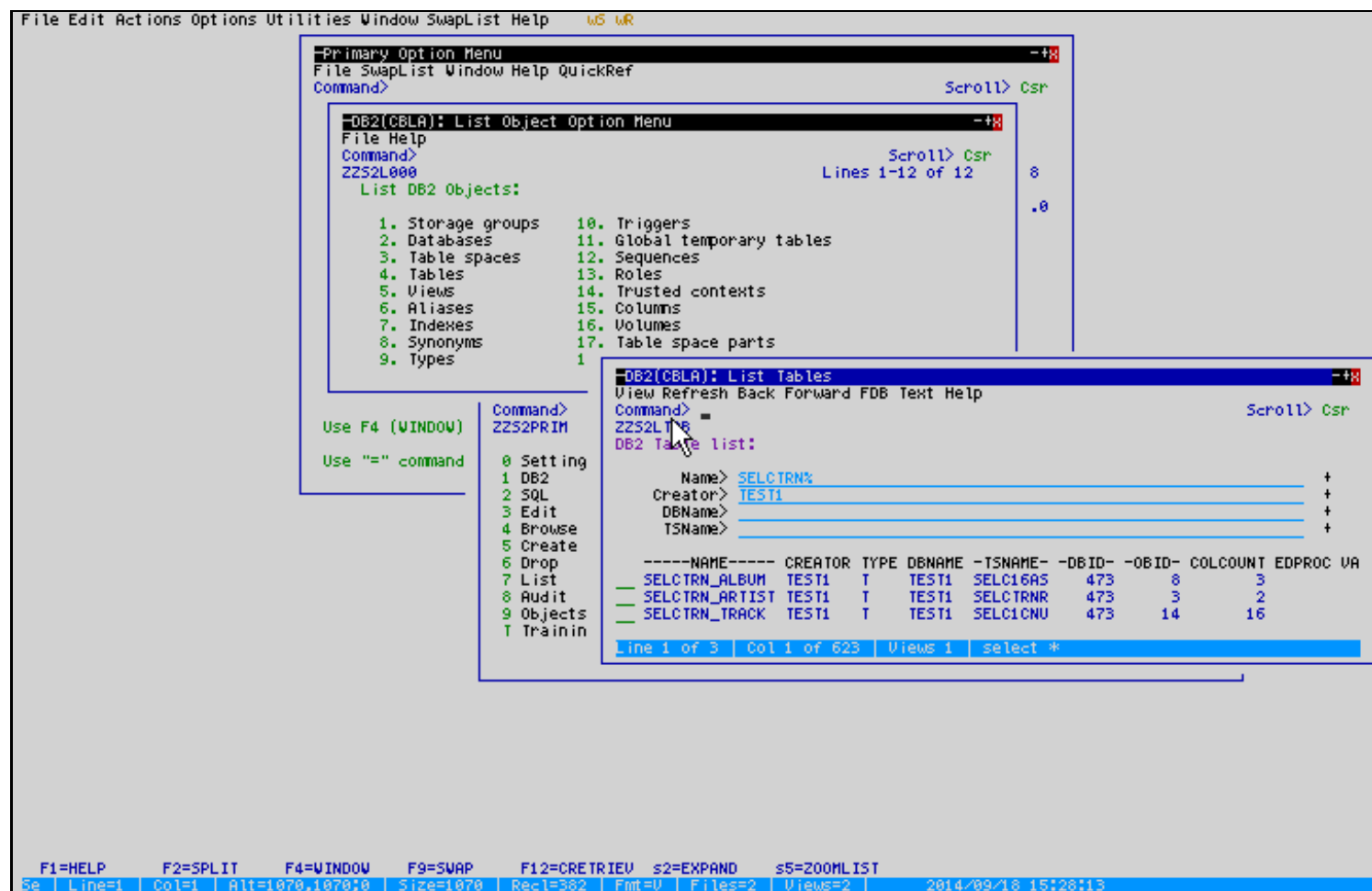


Figure 180. SELCOPYi DB2 Figure 03

## DB2 Table Information

- At the "List Tables" window, enter "/" (forward slash) in the prefix area for table **sqlid.SELCTR\_N\_ALBUM** (the first table in the list).

A popup window will be displayed detailing all of the line-commands available to this type of object list.

- Place your cursor anywhere on the "I - Table Information" entry in the popup list, then press **ENTER**.

Alternatively, enter the "I" line-command directly into the prefix area for table **sqlid.SELCTR\_N\_ALBUM**.

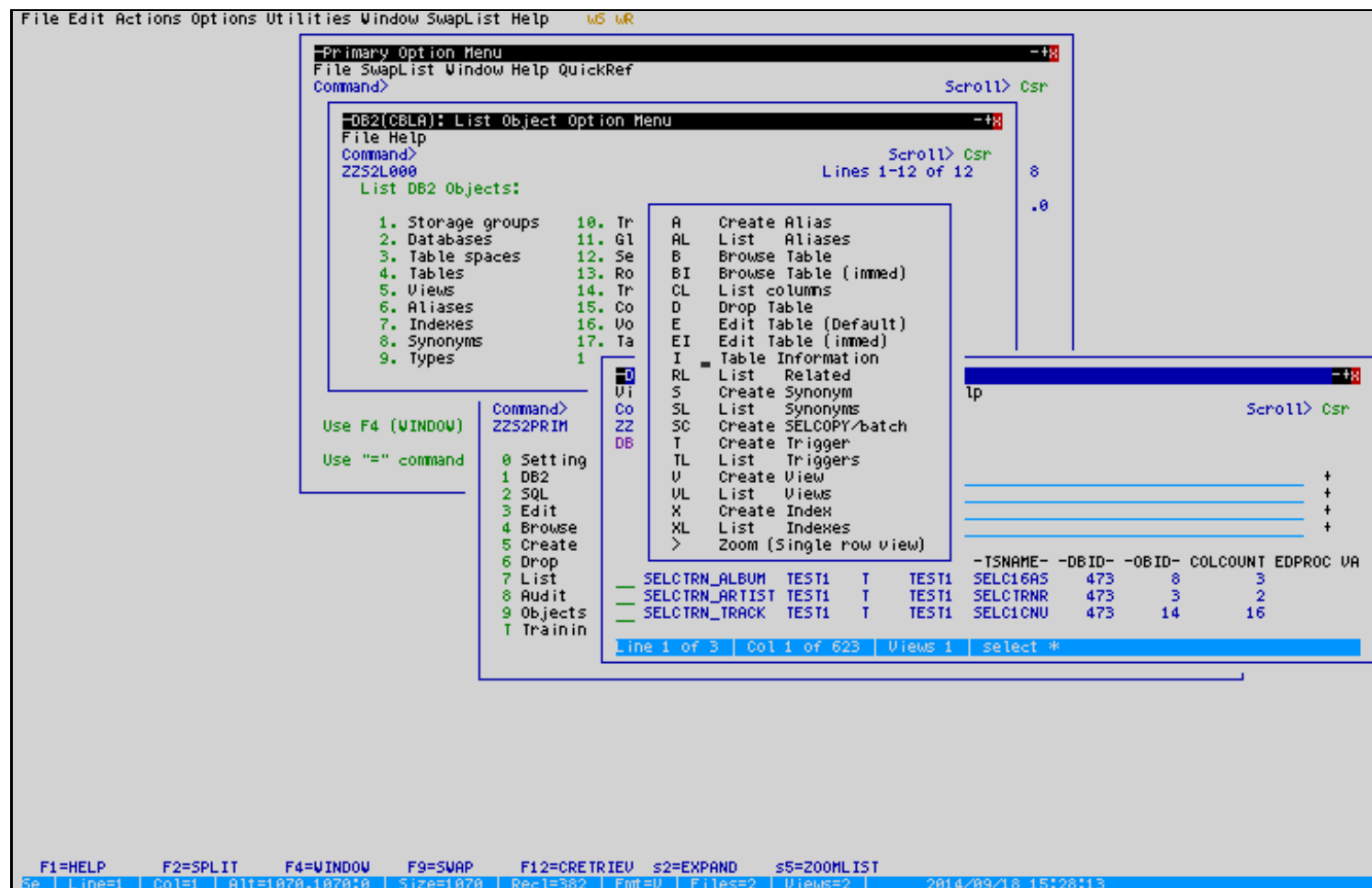


Figure 181. SELCOPYi DB2 Figure 04

## DB2 Table Information (2)

- An **HTML** document window will display detailed information about the selected DB2 table.
- Underlined text denotes a **hyperlink** to other significant parts of the document.

Use the **TAB** key to move the cursor immediately to the next/previous hyperlink.

With your cursor on a link, press **ENTER** to make the jump.

Press **F3** repeatedly to return from any number of nested hyperlink jumps.

The screenshot displays the DB2 Table Information window for the table TEST1.SELCTR\_N\_ALBUM. The window is divided into several sections:

- Primary Option Menu:** Includes File, SwapList, Window, Help, and Command.
- DB2(CBLA): List Object 0:** A menu showing various database objects like Storage groups, Databases, Table spaces, Tables, Views, Aliases, Indexes, Synonyms, and Types.
- Table Information:**
  - Table: TEST1.SELCTR\_N\_ALBUM
  - Type: Base table
  - In Database: TEST1
  - Tablespace: SELC16A5
- Table Statistics:**
  - Table columns: 3
  - Table indexes: 1
  - Unique constraints: 1
  - Parent tables: 1
  - Primary key columns: 1
  - Referential constraints: 1
  - Check constraints: 0
  - Child tables: 1
- Database Object Information:**
  - Database object id: 473
  - Encoding scheme: EBCDIC
  - Edit procedure name:
  - Table object id: 8
  - Table access audit: None
  - Validation procedure name:
- Statistics for table TEST1.SELCTR\_N\_ALBUM:**
  - RUNSTATS time stamp: 0001-01-01 00.00.00.000000
  - Number of rows: -1
  - DASD kilobytes: -1
  - Pages used: -1
- Columns of table TEST1.SELCTR\_N\_ALBUM:**

Column Number	Prime Key Seq	Name	Type	Length or Precision	Scale	Type Code	Null
1	1	ID	SMALLINT	2	0	500	No
2		NAME	VARCHAR	80	0	448	No
3		ARTIST_ID	SMALLINT	2	0	500	No

The bottom status bar shows the current position: Line 1 of 170, Col 1 of 78, File: TEST1.D2014261.T1529576.HTML (TB INFO).

## DB2 Table Information (3)

- Place your cursor on the link for "**Referential constraints:**" then press ENTER.
- We can see that **SELCTRN\_ALBUM** has both
  - a **parent** table (SELCTRN\_ARTIST), and
  - a **child** table (SELCTRN\_TRACK).
 and that the **Delete Rule** is **Restrict** in both cases.
- Press **F3** to exit the Table Information window and return to the Table List.

The screenshot shows the DB2 Table Information window for TEST1.SELCTRN\_ALBUM. The window is divided into two main sections: Parent tables and Dependent child tables.

**Parent tables of table TEST1.SELCTRN\_ALBUM**

Parent Table	Foreign Key of Parent		
	Seq	Column Name	Parent Column Name
Table Name: TEST1.SELCTRN_ARTIST Constraint: ALBUMR1 Delete Rule: Restrict Enforced: Yes	1	ARTIST_ID	ID

**Dependent child tables of table TEST1.SELCTRN\_ALBUM**

Child table	Foreign Key in Child		
	Seq	Column Name	Child Column Name
Table Name: TEST1.SELCTRN_TRACK Constraint: TRACKR1 Delete Rule: Restrict Enforced: Yes	1	ID	ALBUM_ID

The window also includes a Primary Option Menu on the left with options like File, SwapList, Window, Help, and Command. The status bar at the bottom shows the current line and column positions, file name, and date/time.

Figure 182. SELCOPYi DB2 Figure 05

## DB2 Table Edit

- In the prefix area for table **SELCTRN\_TRACK** enter the line-command **"E"** to start the DB2 Edit Table dialog.

Since **"E"** is the default line-command, you can actually just place your cursor anywhere on the line and press **ENTER**, or select it by double-clicking with your mouse.

- The DB2 Table edit dialog will appear with the selected table name already filled in.

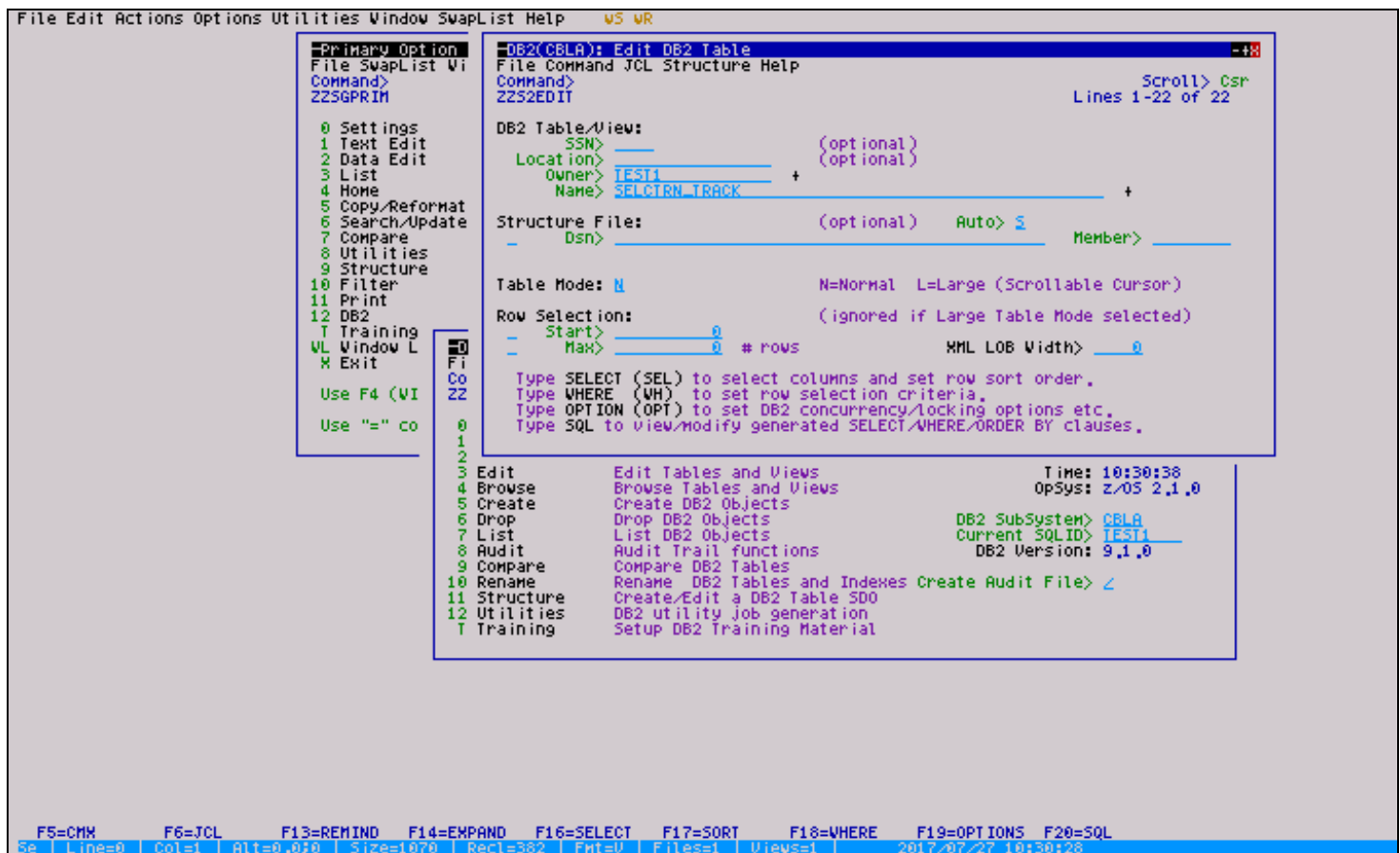


Figure 183. SELCOPYI DB2 Figure 06

## DB2 Table Edit (2)

- Ensure that none of the **Row/Column Selection Options** are set, then press **ENTER** to edit the **TRACK** table.
- The table will be displayed in default multi-row format.

Scroll up/down using **F7/8** to view and edit further rows.  
Scroll left/right using **F10/F11** to view and edit further columns.

- Type the **INFO** primary command to display detailed information about the currently edited DB2 table.
  - All the power of the SELCOPYi **Data-Editor** is now at your finger tips.
- e.g. to open another separately scrollable view of the same table just type the primary command **WIN NEW** or **WW**.

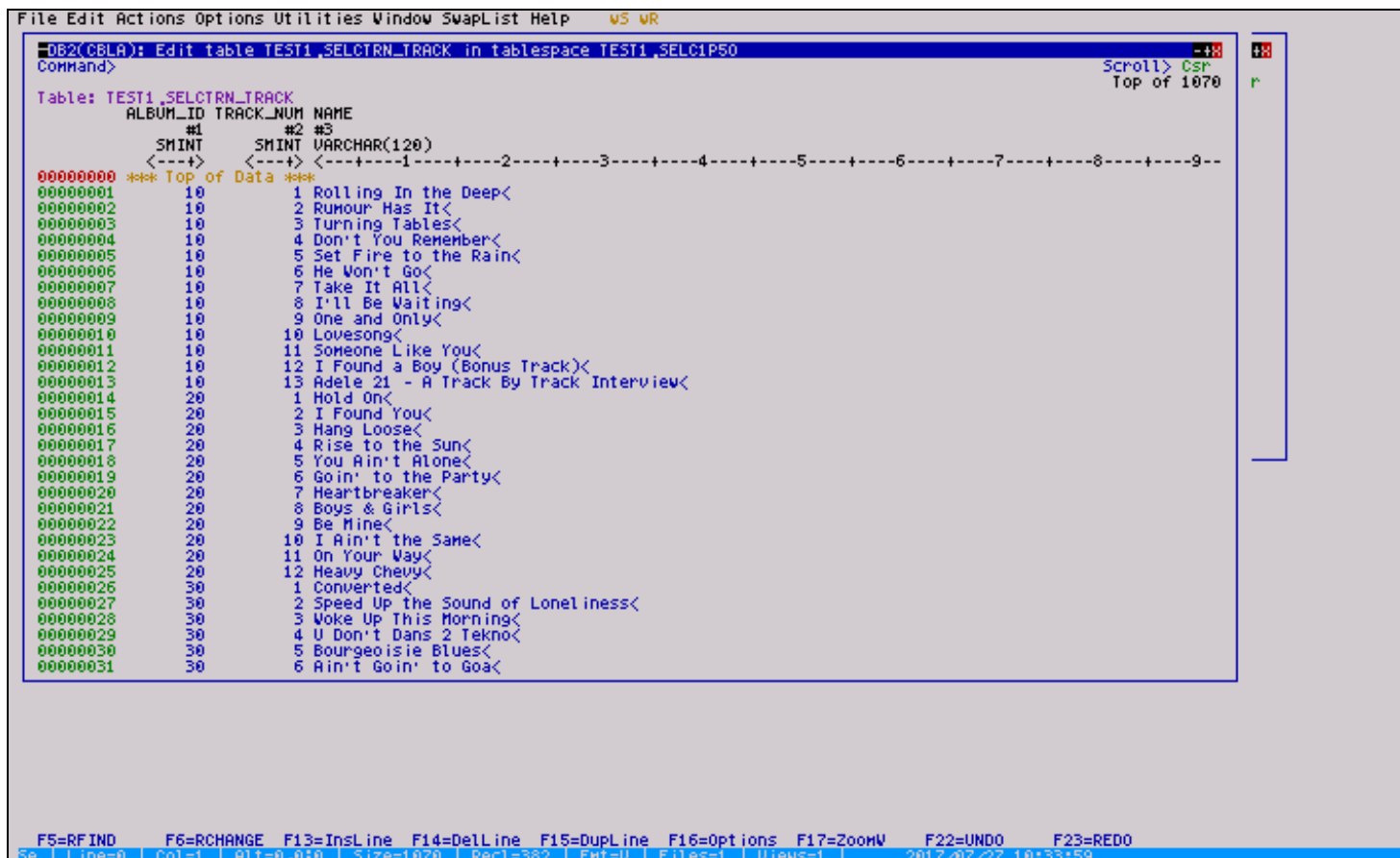


Figure 184. SELCOPYi DB2 Figure 07



## The Zoom Window

- With your cursor anywhere on a particular row, press the **"ZoomW"** key (**Shift-F5**) to open a separate window displaying the selected row in "zoomed" format.
- Additional DB2 specific column attribute information is displayed in a zoomed view.

Type primary command **"HELP COLATTR"** (H COLA) for more details on the content of these columns.

- Any number of zoomed view windows may be opened at the same time, then moved/resized as desired, making visual comparison of multiple rows beautifully simple.

The screenshot displays the DB2 Command Editor interface. The main window shows the table `TEST1.SELCTR_TRACK` with columns `ALBUM_ID`, `TRACK_NUM`, and `NAME`. The data is displayed in a grid format. A zoomed-in window is open, showing the column attributes for the selected row (Row 00000005). The zoomed window displays the following information:

Ref	Column	Type	PKUIFCND	Length	SQLCode
#1	ALBUM_ID	SMINT	f	10	0
#2	TRACK_NUM	SMINT		5	
#3	NAME	VARCHAR(120)		120	
#4	TRACK_ID	SMINT		2091	
#5	PERSISTENT_ID	CH(16)	1	AED739D8574AA4C5	
#6	TOTAL_TIME	INT	nY	242973	
#7	FILE_SIZE	BIGINT	nY	8566635	
#8	BIT_RATE	INT	nY	256	
#9	SAMPLE_RATE	DEC(5,0)	nY	44100	
#10	YEAR	SMINT	nY	2011	
#11	NORMALIZATION	DEC(5,0)	nY	9255	
#12	DISC_NUMBER	SMINT	nY	1	
#13	ALBUM_ARTIST	VARCHAR(80)	nY	Adele	
#14	RELEASE_DATE	TIMESTAMP	nY	2011-01-21-08.00.00.000000	
#15	DATE_ADDED	TIMESTAMP	nY	2012-08-02-11.30.36.000000	
#16	DATE_MODIFIED	TIMESTAMP	nY	2011-08-19-12.30.16.000000	

The bottom status bar shows the following information: `F5=WinMax F6=WinRes F7=Drag-U F8=Drag-D F10=Drag-L F11=Drag-R s1=wS s2=wR s3=Width-20 s4=Width+20 s5=Depth-20`. The current line is 5, column 1, and the table is `TEST1.SELCTR_TRACK`.

Figure 185. SELCOPY: DB2 Figure 08

## Editing selected table columns and rows

- Press **F3** to exit the edit session and return to the Table Edit dialog.
- Type **SELECT (SEL)**, or press Shift-F4 to start a dialog that allows you specify the columns you wish to see.
- The same dialog is used to define the sort order of your selected rows.

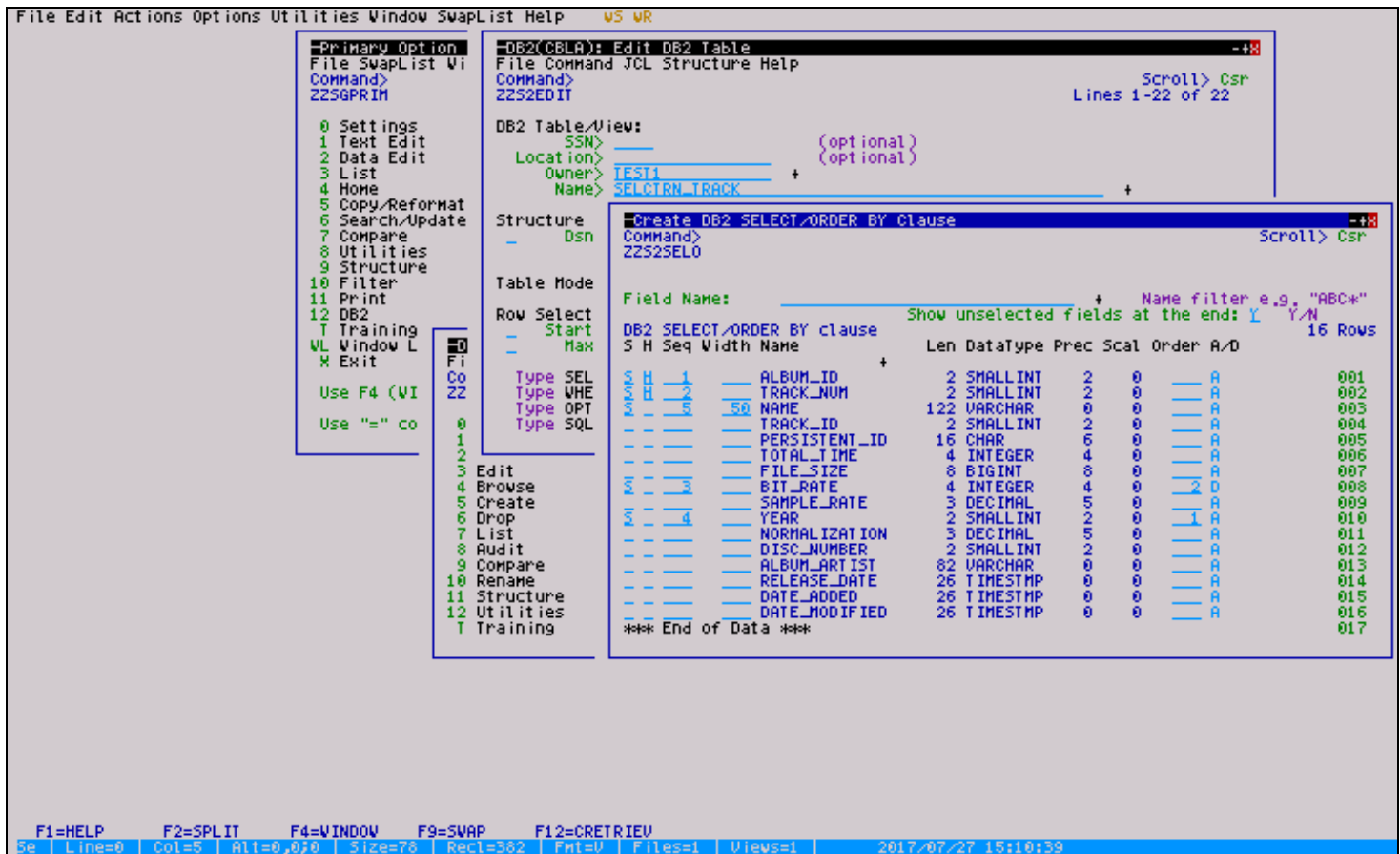


Figure 186. SELCOPYi DB2 Figure 09

The screen shot above shows specification of the following:

- Explicit selection of columns in the following order:-
  1. **ALBUM\_ID**
  2. **TRACK\_NUM**
  3. **BIT\_RATE**
  4. **YEAR**
  5. **NAME**
 with all other "unselected" columns following at the end.
- Columns **ALBUM\_ID** and **TRACK\_ID** are defined as *held*, meaning they will always stay visible when the screen is scrolled right to reveal further columns.
- The row sort order is defined as
  1. **YEAR** in ascending sequence
  2. **BIT\_RATE** in descending sequence
- The **NAME** column width is restricted to **50** characters.

## Using the "WHERE" dialog

Type **WHERE (WH)**, or press Shift-F6 to start a dialog that allows you to enter one or more row selection conditions against each of the listed table columns.

As an exercise we'll select all **TRACK** rows that have the string **"Live"**, either in **round-** or **square-brackets**.

We'll also make the selection **case insensitive** and add an extra condition to deselect rows with zero in the **"YEAR"** column.

Once we've selected the rows, we'll standardise by changing all the **square-bracketed** versions to use **round-brackets**.

- Place your cursor in the **Op** (Relational Operator) input field for table column **"NAME"**, then enter **"/"** and press ENTER to display a list of valid operators.
- Select **LK** (Like) from the list by placing the cursor and pressing ENTER. Alternatively, just enter **"LK"** directly into the **Op** field.
- Tab to the **Value** input field, then enter **"%(Live)%"**. There is no need to put the value in quotes, SELCOPYi will add them for you.
- Tab again to the **VO** (Value Option) input field, then enter **"/"**. Select **"A - Any Case"** to indicate case insensitivity.
- Use the **Back-Tab** key to get to the numeric prefix area then enter **"R"** to replicate the dialog table row for **"NAME"**. Now we can enter a second condition based on the contents of this DB2 table column.
- On the duplicate line, change the **Con** (Connector) field from **"AND"** to **"OR"**, then enter **"%[Live]%"** in the **Value** input field.
- In the **Op** (Relational Operator) input field for table column **"YEAR"**, enter **"<>"** which indicates a "not equal" condition is required.
- Tab to the **Value** input field, then enter **0**.
- On the line defining the first condition for the **"NAME"** column (line 3), enter **"("** into the opening parenthesis field, and on the line defining the second condition (line 4), enter **")"** into the closing parenthesis field. This will make the NAME (OR) conditions and the YEAR condition independent of each other.

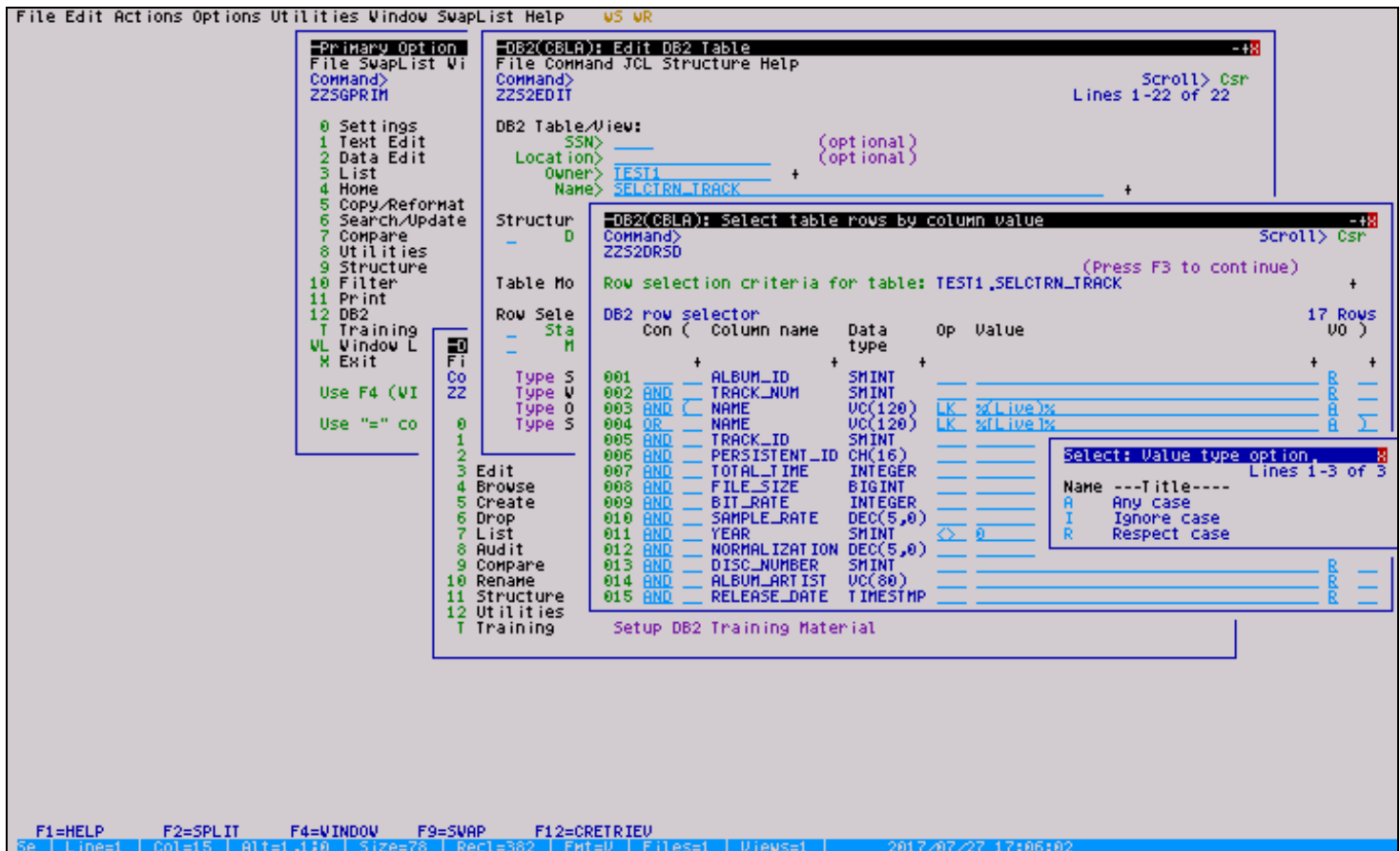


Figure 187. SELCOPYi DB2 Figure 10

## Using FIND/CHANGE

- Press **F3** to exit the WHERE dialog then **ENTER** to edit the selected rows.
- Type **FIND [LIVE]** to hilite the square-bracketed versions of the string.
- Type **CHANGE ALL [LIVE] '(Live)'** to update them all to use round-brackets.

Note that the CHANGE command requires that the string "(Live)" is enclosed in quotes, whereas "[Live]" needn't be. That is because **round-brackets** have a special meaning when used in **FIND/CHANGE** command syntax (type "HELP CHANGE" for more info).

- Press **F3** to exit and save changes.

File Edit Actions Options Utilities Window SwapList Help **WS WR**

DB2(CBLA): Edit table TEST1\_SELCTR\_TRACK in tablespace TEST1\_SELCP50  
 Command> change all [Live] '(Live)'

Scroll> Csr  
Top of 78

Table: TEST1\_SELCTR\_TRACK

ALBUM_ID	TRACK_NUM	BIT_RATE	YEAR	NAME	TRACK_ID	PERSISTENT_ID
#1	#2	#3	#10	#3	#4	#5
SMINT	SMINT	INT	SMINT	VARCHAR(120)	SMINT	CH(16)
00000000	520	11	256	2010 Barracuda (Live)<	4137	7044ACB886A47
00000001	570	1	256	2008 Neon (Live)<	3021	5404FF08AA1E9
00000002	570	2	256	2008 Stop This Train (Live)<	3023	C208209410FC0
00000003	570	3	256	2008 In Your Atmosphere (Live)<	3025	108AF91AE380F
00000004	570	4	256	2008 Daughters (Live)<	3027	87F8AA66F1891
00000005	570	5	256	2008 Free Fallin' (Live)<	3029	FF51798879EB9
00000006	570	6	256	2008 Everyday I Have the Blues (Live)<	3031	2AF08B93888AF
00000007	570	7	256	2008 Wait Until Tomorrow (Live)<	3033	97818AF5C1C03
00000008	570	8	256	2008 Who Did You Think I Was (Live)<	3035	48C6F58167708
00000009	570	9	256	2008 Come When I Call (Live)<	3037	F68F5507003A4
00000010	570	10	256	2008 Gravity (Live)<	3057	7AC09F30ADF5
00000011	570	11	256	2008 Good Love Is On the Way (Live)<	3039	E7CF80F73E489
00000012	570	12	256	2008 Out of My Mind (Live)<	3041	09CF742CB03FA
00000013	570	13	256	2008 Vultures (Live)<	3043	30C20008CF8A4
00000014	570	14	256	2008 Bold As Love (Live)<	3045	7618D5B728CB8
00000015	570	15	256	2008 Waiting On the World to Change (Live)<	3047	A2D2483827114
00000016	570	16	256	2008 Slow Dancing In a Burning Room (Live)<	3049	3DC349A4797D9
00000017	570	17	256	2008 Why Georgia (Live)<	3051	1F5007007F2D3
00000018	570	18	256	2008 The Heart of Life (Live)<	3053	52B0576F1C359
00000019	570	19	256	2008 I Don't Need No Doctor (Live)<	3055	53A2868C88A88
00000020	570	20	256	2008 I Don't Trust Myself (With Loving You) [Live]<	3059	F4486F309C9E2
00000021	570	21	256	2008 Belief (Live)<	3061	5BB4523038658
00000022	570	22	256	2008 I'm Gonna Find Another You (Live)<	3063	C066F55F83D3A
00000023	570	1	256	1998 Don't Stop Believin' (Live)<	3143	5C0C2351AE846
00000024	640	2	256	1998 Separate Ways (Worlds Apart) (Live)<	3145	C638C4330F1B9
00000025	640	3	256	1998 After the Fall (Live)<	3147	58CF2C29F79A7
00000026	640	4	256	1998 Lovin', Touchin', Squeezin' (Live)<	3149	8F87F55586E06
00000027	640	5	256	1998 Faithfully (Live)<	3151	7C3A65392EB41
00000028	640	6	256	1998 Who's Crying Now (Live)<	3153	809255950FAE8
00000029	640	7	256	1998 Any Way You Want It (Live)<	3155	650A88FE0FC02
00000030	640	8	256	1998 Lights (Live)<	3157	0962BA2528F90

\*\*\* Top of Data \*\*\*

F5=RFIND F6=RCHANGE s1=InsLine s2=DelLine s3=DupLine s4=Options s5=ZoomW s10=UNDO s11=REDO  
 Se | Line=0 | Col=5 | Alt=1,171 | Size=78 | Recl=382 | Fnt=U | Files=1 | Views=1 | 2017/07/28 14:31:06

Figure 188. SELCOPYi DB2 Figure 11

## Editing Related Tables (REDIT)

- At the "List Tables" window, enter "EI" (Edit Immediate) in the prefix area for table **sqld.SELCTRN\_ARTIST**.
- The "EI" and "BI" (Browse Immediate) line-commands bypass the dialogs that allow you to specify row selection and other edit/browse options, making them suitable only for tables small enough to be loaded completely into available storage.

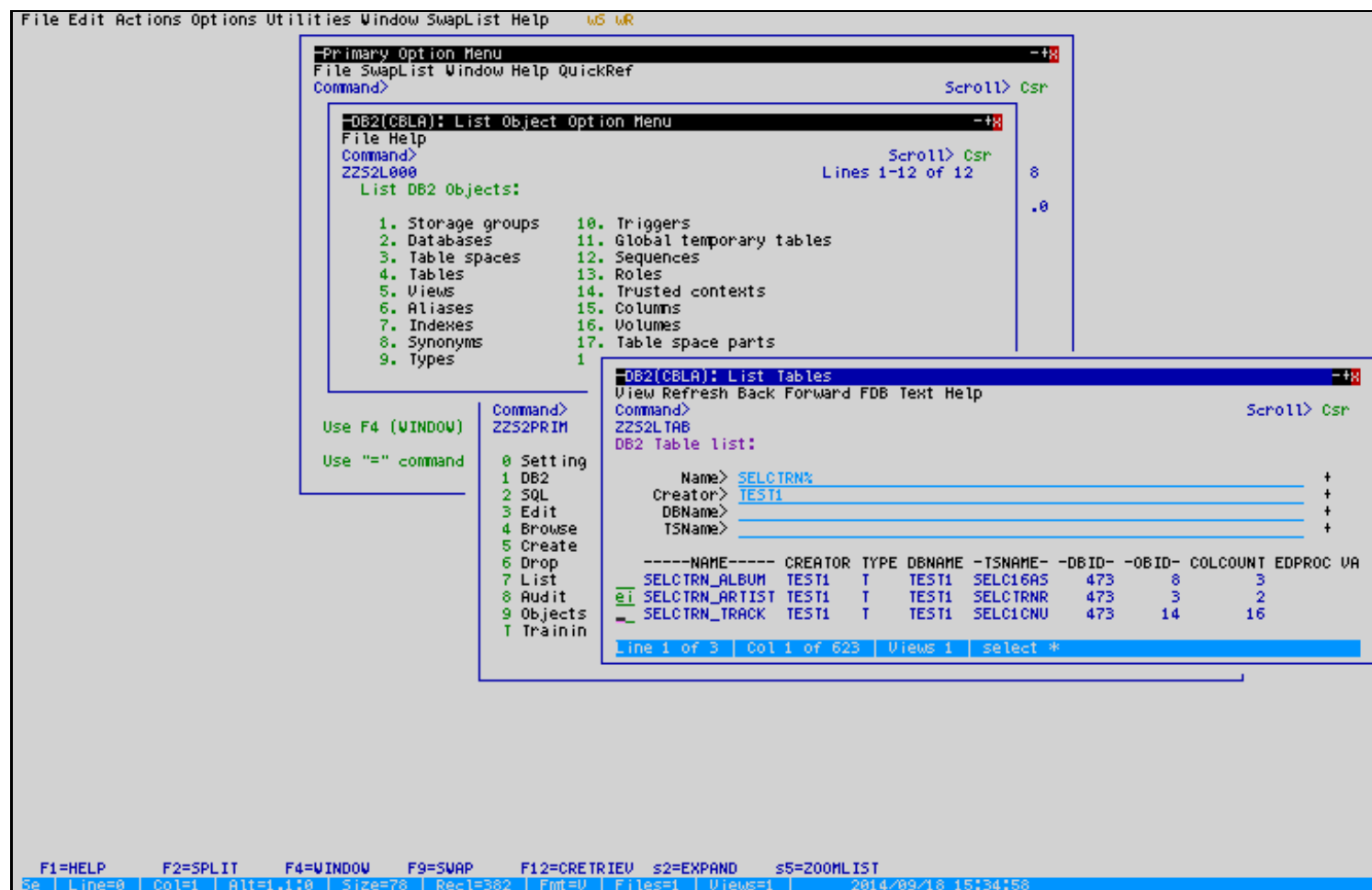


Figure 189. SELCOPYi DB2 Figure 12

## The "RE" line-command

- To explore the Artist "**Alanis Morissette**" enter "**RE**" in the prefix area.

The screenshot shows the DB2 Command Line Editor interface. The main window displays a table named `TEST1.SELCTR_ARTIST` with columns `ID`, `NAME`, `#1`, and `#2`. The table contains 31 rows of data, including artists like Adele, Alabama Shakes, and Alanis Morissette. The `RE` command is entered in the prefix area, and the search results are displayed in a separate window.

Table: `TEST1.SELCTR_ARTIST`

ID	NAME	#1	#2
00000001	Adele	10	
00000002	Alabama Shakes	20	
00000003	Alabama 3	30	
RE	Alanis Morissette	40	
00000005	Alex Harvey	50	
00000006	AC/DC	60	
00000007	Bob Dylan	70	
00000008	Bruce Springsteen	80	
00000009	Bruce Springsteen & The Sessions Band	90	
00000010	Burt Bacharach & Elvis Costello	100	
00000011	Christina Aguilera	110	
00000012	Christina Aguilera & Dave Navarro	120	
00000013	Coldplay	130	
00000014	Crash Test Dummies	140	
00000015	Damien Rice	150	
00000016	David Gray	160	
00000017	Deep Purple	170	
00000018	Del Amitri	180	
00000019	Duffy	190	
00000020	DJ Fresh	200	
00000021	Embrace	210	
00000022	Florence + The Machine	220	
00000023	Gretchen Wilson	230	
00000024	Guns N' Roses	240	
00000025	Jennifer Hudson	250	
00000026	Jessie J	260	
00000027	John Mayer	270	
00000028	John Mellencamp	280	
00000029	Journey	290	
00000030	Judas Priest	300	
00000031	Kosheen	310	

Search Results:

PE	DBNAME	-TSNAME-	-DBID-	-OBJID-	COLCOUNT	EDPROC	VA
TEST1	SELCT16AS		473	8	3		
TEST1	SELCTRNR		473	3	2		
TEST1	SELCT1CNU		473	14	16		

Views: 1 | select \*

Figure 190. SELCOPY: DB2 Figure 13

## The Related Tables List

- A separate window will appear listing the all related tables.
- The **ARTIST** table has only one dependent (child), the **ALBUM** table.
- Enter "RE" in the list entry prefix area (or just select it with the mouse).

DB2(CBLA): Edit table TEST1.SELCTR\_ARTIST

Table: TEST1.SELCTR\_ARTIST

ID NAME

#1 #2

SMINT VARCHAR(70)

\*\*\* Top of Data \*\*\*

00000001 10 Adele<

00000002 20 Alabama Shakes<

00000003 30 Alabama 3<

00000004 40 Alanis Morissette<

00000005 50 Alex Harvey<

00000006 60 AC/DC<

00000007 70 Bob Dylan<

00000008 80 Bruce Springsteen<

00000009 90 Bruce Springsteen<

00000010 100 Burt Bacharach & E

00000011 110 Christina Aguilera

00000012 120 Christina Aguilera

00000013 130 Coldplay<

00000014 140 Crash Test Dummies

00000015 150 Damien Rice<

00000016 160 David Gray<

00000017 170 Deep Purple<

00000018 180 Del Amitri<

00000019 190 Duffy<

00000020 200 DJ Fresh<

00000021 210 Embrace<

00000022 220 Florence + The Machine<

00000023 230 Gretchen Wilson<

00000024 240 Guns N' Roses<

00000025 250 Jennifer Hudson<

00000026 260 Jessie J<

00000027 270 John Mayer<

00000028 280 John Mellencamp<

00000029 290 Journey<

00000030 300 Judas Priest<

00000031 310 Kosheen<

DB2(CBLA): List Related Tables

Command>

ZZ52LREL

List tables related to:

Owner> TEST1

Name> SELCTR\_ARTIST

Related Tables

Sel	Related Table	Relationship	Relationship Type	Foreign Key Columns	Delete Key Rule	Enforced by DB2
1	TEST1 SELCTR_ALBUM	DEPENDENT			1 Restrict	Yes

\*\*\* Top of Data \*\*\*

pe TEST1 SELCTR\_ALBUM

\*\*\* End of Data \*\*\*

Views 1 select \*

PE DBNAME -TSNAME- -DBID- -OBID- COLCOUNT EDPROC VA

PE	DBNAME	-TSNAME-	-DBID-	-OBID-	COLCOUNT	EDPROC	VA
TEST1	SELCTR6AS	473	8	3			
TEST1	SELCTRNR	473	3	2			
TEST1	SELCTRNU	473	14	16			

F1=HELP F2=SPLIT F4=WINDOW F5=Select F6=Deselect F9=SWAP F12=CRETRIEU s2=EXPAND s5=ZOOM s10=UNDO s11=REDO

Se Line=0 Col=1 Alt=0,010 Size=73 Rec1=84 Fmt=U Files=1 Views=1 2014/09/18 15:35:19

Figure 191. SELCOPY: DB2 Figure 14

## Related Table Edit Window (1)

- A separate edit window will display only the **ALBUM** rows for **Alanis Morissette** (ARTIST\_ID = 40).
- To explore the album "**Jagged Little Pill**" enter "**RE**" in the prefix area.

The screenshot displays the DB2 Related Table Edit Window with the following components:

- Main Window:** Shows the table `TEST1.SELCTR_ARTIST` with columns `ID` and `NAME`. The data is displayed in a grid format. The first few rows are:
 

ID	NAME
10	Adele
20	Alabama Shakes
30	Alabama 3
40	Alanis Morissette
- Related Table Window:** Shows the table `TEST1.SELCTR_ALBUM` with columns `ARTIST_ID` and `NAME`. The data is displayed in a grid format. The first few rows are:
 

ARTIST_ID	NAME
40	Alanis Morissette: The Collection
40	Jagged Little Pill
190	Duffy
200	DJ Fresh
210	Embrace
220	Florence + The Machine
230	Gretchen Wilson
240	Guns N' Roses
250	Jennifer Hudson
260	Jessie J
270	John Mayer
280	John Mellencamp
290	Journey
300	Judas Priest
310	Kosheen
- Table Relationship Window:** Shows the relationship between the two tables. The table `TEST1.SELCTR_ARTIST` is the parent table, and `TEST1.SELCTR_ALBUM` is the child table. The relationship is defined by the constraint `ALBUMR1(R)`.
- Table Structure Window:** Shows the table structure for `TEST1.SELCTR_ARTIST` and `TEST1.SELCTR_ALBUM`. The table `TEST1.SELCTR_ARTIST` has columns `ID` (VARCHAR(70)) and `NAME` (VARCHAR(80)). The table `TEST1.SELCTR_ALBUM` has columns `ARTIST_ID` (VARCHAR(70)) and `NAME` (VARCHAR(80)).
- Table List Window:** Shows a list of tables in the database. The table `TEST1.SELCTR_ARTIST` is selected.

Figure 192. SELCOPY: DB2 Figure 15



## Related Table Edit Window (2)

- A separate window will once again appear listing the all related tables.
- The **ALBUM** table again has only one **DEPENDENT**, the **TRACK** table.
- Enter **"RE"** in the list entry prefix area (or select it with the mouse).
- A separate edit window will display only the **TRACK** rows for **Jagged Little Pill** (ALBUM\_ID = 50).

The screenshot displays three overlapping windows in the DB2 CBLA environment:

- Top Window:** Edit table TEST1.SELCTR\_ARTIST. It shows a table with columns ID, NAME, and SMINT. Data includes Adele, Alabama Shakes, Alabama 3, and Alanis Morissette.
- Middle Window:** Edit related table TEST1.SELCTR\_ALBUM. It shows a table with columns ARTIST\_ID, ID, NAME, and SMINT. It is dependent on TEST1.SELCTR\_ARTIST via constraint ALBUMR1(R). Data includes Alanis Morissette: The Collection and Jagged Little Pill.
- Bottom Window:** Edit related table TEST1.SELCTR\_TRACK. It shows a table with columns ALBUM\_ID, TRACK\_NUM, and NAME. It is dependent on TEST1.SELCTR\_ALBUM via constraint TRACKR1(R). Data shows tracks for Jagged Little Pill (Album ID 50).

At the bottom, a status bar shows keyboard shortcuts (F5=RFIND, F6=RCHANGE, etc.) and a timestamp of 2014/09/18 15:36:37.

Figure 193. SELCOPY: DB2 Figure 16

## Generating CSV, XML or JSON from selected table rows/columns

Typically used for export to other platforms, **Comma Separated Variable (CSV)**, **Extended Markup Language (XML)** and **JavaScript Object Notation (JSON)** documents may be generated from the currently viewed DB2 table data.

To select the data columns required:

1. Press the **Options** key (**Shift-F4**) to display the DB2 options popup.
2. Select **Option 1** to **Select/Exclude visible field-names**.

Alternatively, just type the **SELECT (SEL)** primary command, with no parameters to display the field selection dialog.

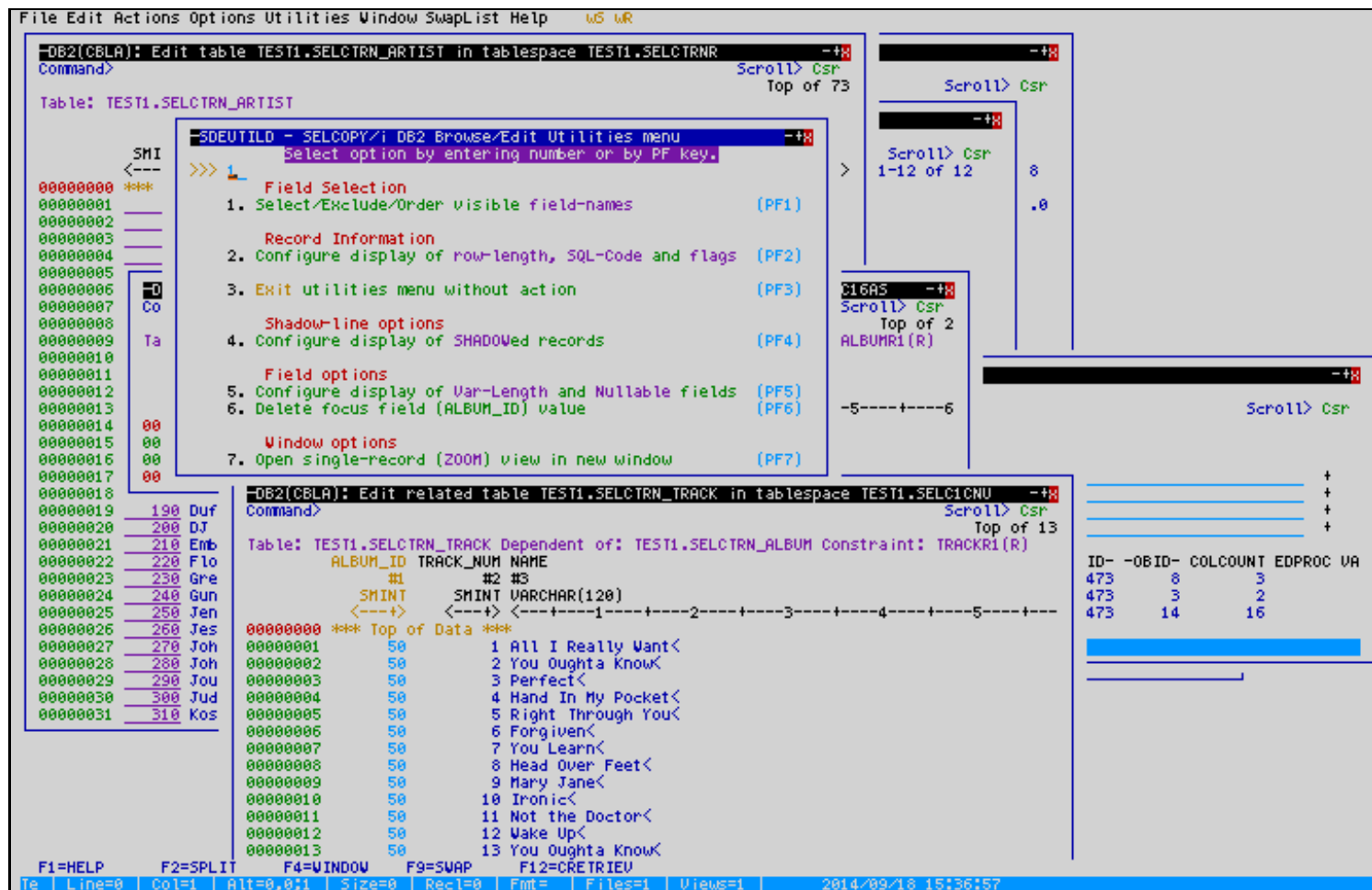


Figure 194. SELCOPYi DB2 Figure 17

## The "SELECT" dialog

We'll select column **PERSISTENT\_ID** first, followed by **TRACK\_NUM** and **NAME**.

- Set option "**Perm/Temp:**" to "**TEMP**".
- Set option "**Show unselected fields at the end:**" to "**N**".
- Enter "**S**" to select each of the required columns.
- Enter "**1**" in **Seq** field for **PERSISTENT\_ID** to ensure it's selected first.

If not explicitly ordered by entering a number in the **Seq** field, other fields will be selected in the order they appear in the selection table.

You can enter standard edit line-commands ("M" and "A") in the numeric "prefix" area on the right to re-order the selection table rows.

- Press **F3** to exit the dialog.

Your DB2 table view will be updated according to your selections.

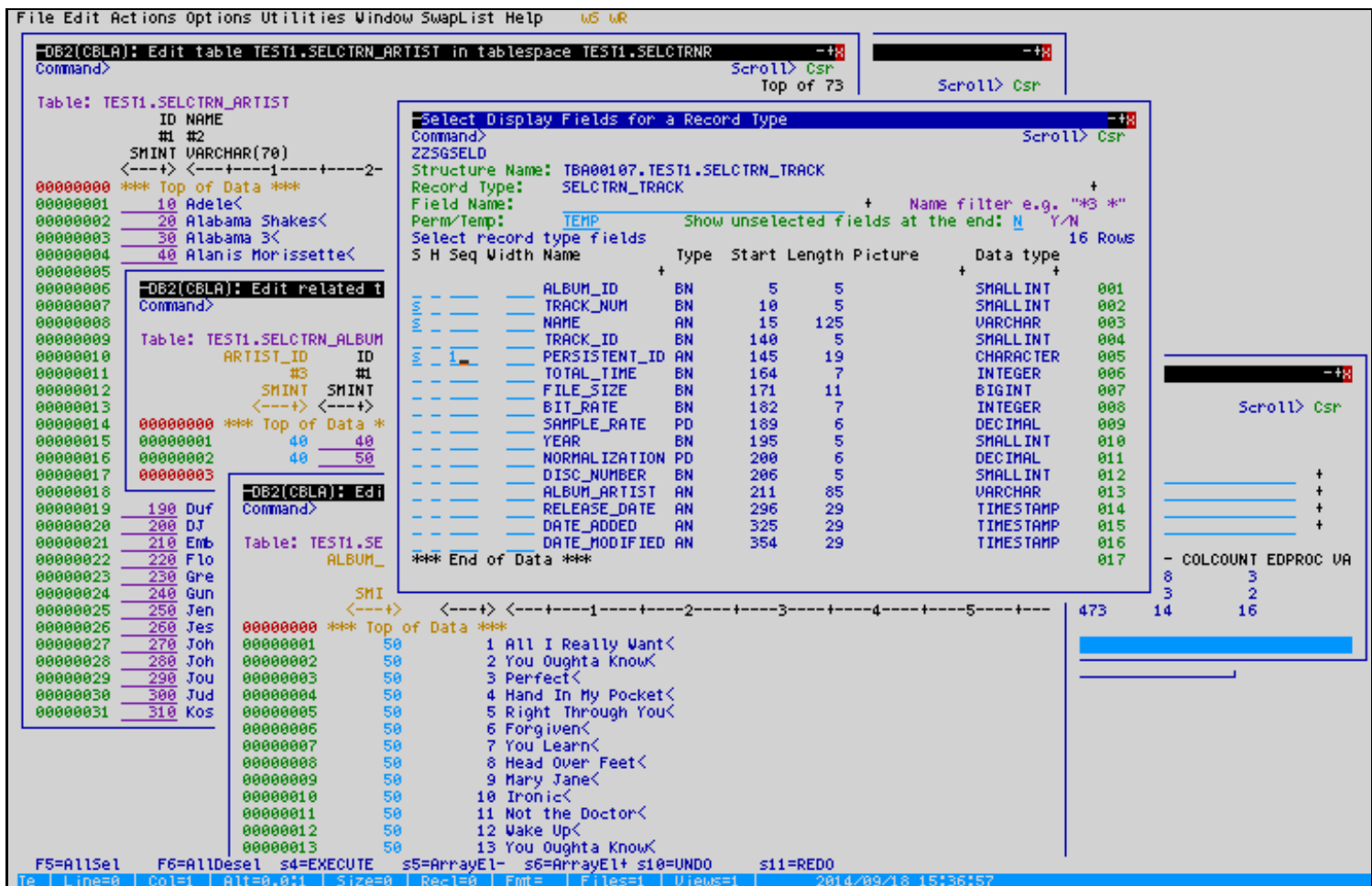


Figure 195. SELCOPYi DB2 Figure 18

## The "CSVGEN" dialog

Type the primary command **CSVGEN (CSV)** with no parameters to start the CSV dialog.

- Select option **"Start at Top-of-File"**.
- Select option **"End at End-of-File"**.
- Enter an **Output CSV Text File** name of your choice.

e.g. <userid>.SELCOPIY.CSV(PILL)

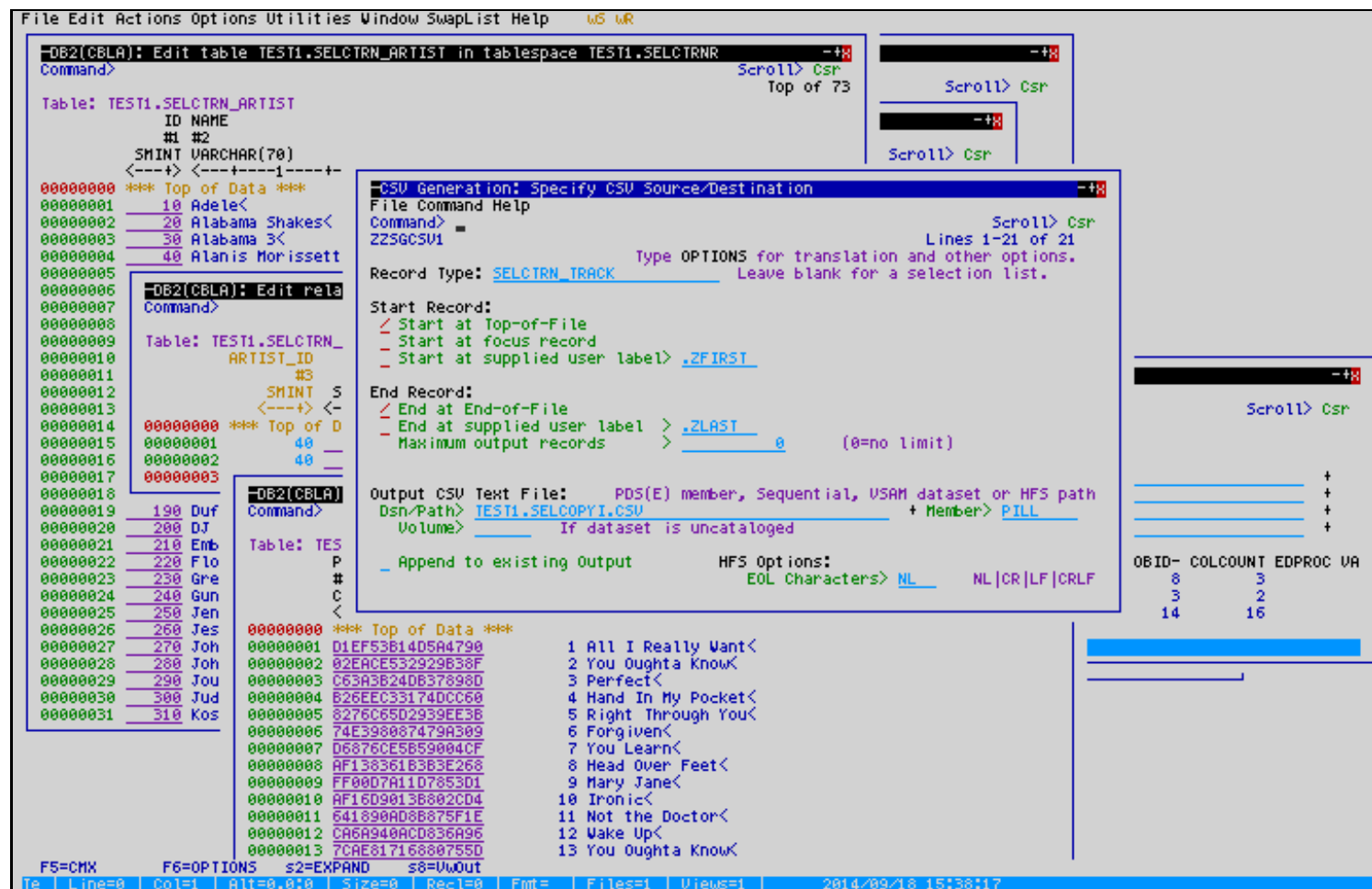


Figure 196. SELCOPIY DB2 Figure 19

## Sample "CSVGEN" output

Press the **OPTION** key (F6) if you wish to review other available CSVGEN options, otherwise just press **ENTER** to generate your **Comma Separated Variable** document.

```

DB2(CBLA): Edit table TEST1.SELCTRN_ARTIST in tablespace TEST1.SELCTRN
Browse TEST1.SELCOPYI.CSV(PILL) 16380 U POSE
Command>
225D569I CSVGEN has written 14 records of record type "SELCTRN_TRACK" to dataset TEST1.SELCOPYI.CSV(PILL) from 13
records in dataset TEST1.SELCTRN_TRACK.
UnMapped
<-----1-----2-----3-----4-----5-----6-----7-----8-----9-----10-----11-----
00000001 PERSISTENT_ID,TRACK_NUM,NAME
00000002 "D1EF53B14D5A4790",1,"All I Really Want"
00000003 "02EACE532929B38F",2,"You Oughta Know"
00000004 "C63A3B24DB37898D",3,"Perfect"
00000005 "B26EEC33174DCC60",4,"Hand In My Pocket"
00000006 "8276C65D2939EE3B",5,"Right Through You"
00000007 "74E398087479A309",6,"Forgiven"
00000008 "D6876CE5B59004CF",7,"You Learn"
00000009 "AF138361B3B3E268",8,"Head Over Feet"
00000010 "FF00D7A11D7853D1",9,"Mary Jane"
00000011 "AF16D9013B802CD4",10,"Ironic"
00000012 "641890AD8B875F1E",11,"Not the Doctor"
00000013 "CA6A940ACD836A96",12,"Wake Up"
00000014 "7CAE81716880755D",13,"You Oughta Know"
00000015 *** End of Data ***

00000009 FF00D7A11D7853D1      9 Mary Jane<
00000010 AF16D9013B802CD4      10 Ironic<
00000011 641890AD8B875F1E      11 Not the Doctor<
00000012 CA6A940ACD836A96      12 Wake Up<
00000013 7CAE81716880755D      13 You Oughta Know<

F5=RFIND  F6=RCHANGE  s1=InsLine  s2=DelLine  s3=DupLine  s4=Options  s5=ZoomW  s10=UNDO  s11=REDO
Se | Line=0 | Col=1 | Alt=0,0;0 | Size=14 | Rec1=16380 | Fmt=U | Files=4 | Views=4 | 2014/09/18 15:38:27
COUNT EDPROC VA
3
2
16

```

Figure 197. SELCOPYI: DB2 Figure 20

## The "XMLGEN" dialog

Exit the generated CSV, then type the primary command **XMLGEN (XML)** with no parameters to start the XML dialog.

- Select option **"Start at Top-of-File"**.
- Select option **"End at End-of-File"**.
- Enter an **"Output XML Text File"** name of your choice.  
e.g. <userid>.SELCOPYI.XML(PILL)

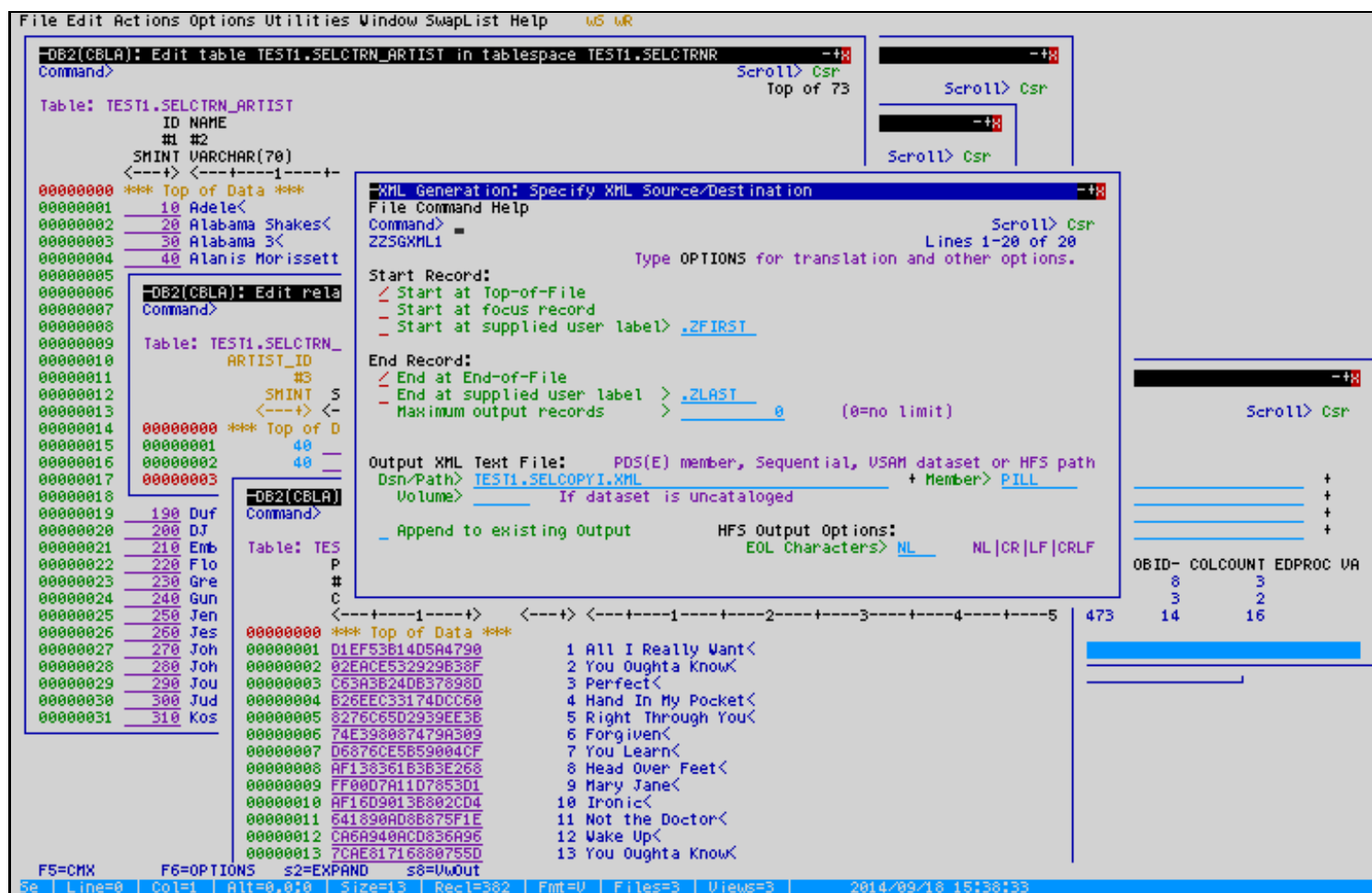


Figure 198. SELCOPYI: DB2 Figure 21

## Sample "XMLGEN" output

Press the **OPTION** key (F6) if you wish to review other available XMLGEN options, otherwise just press **ENTER** to generate your **Extended Markup Language** document.

```

File Edit Actions Options Utilities Window SwapList Help  WS  WR
--TEST1.SELCOPYI.XML(PILL) 16380 V PDSE Size=80 Alt=0,0;0 --+X
Command>
000001 <!--1-->2-->3-->4-->5-->6-->7-->
000002 <!--
000003 <!-- SELCOPYI 3.3B (C)2013 Compute(Bridgend) Ltd UK +44(1656)65222 -->
000004 <!--
000005 <!-- XMLGEN -->
000006 <!--
000007 <!-- Operating system: z/OS 1.11.0 -->
000008 <!--
000009 <!-- System id: ADCD -->
000010 <!--
000011 <!-- Created by: TEST1 2014/09/18 15:38:45 -->
000012 <!--
000013 <!--
000014 <INPUT FILE="TEST1.SELCTR_TRACK" FORMAT="TBA00107.TEST1.SELCTR_TRACK">
000015 <SELCTR_TRACK SEQ_NUMBER="1">
000016 <TRACK_NUM>1</TRACK_NUM>
000017 <NAME>All I Really Want</NAME>
000018 <PERSISTENT_ID>D1EF53B14D5A4790</PERSISTENT_ID>
000019 </SELCTR_TRACK>
000020 <SELCTR_TRACK SEQ_NUMBER="2">
000021 <TRACK_NUM>2</TRACK_NUM>
000022 <NAME>You Oughta Know</NAME>
000023 <PERSISTENT_ID>02EACE532929B38F</PERSISTENT_ID>
000024 </SELCTR_TRACK>
000025 <SELCTR_TRACK SEQ_NUMBER="3">
000026 <TRACK_NUM>3</TRACK_NUM>
000027 <NAME>Perfect</NAME>
000028 <PERSISTENT_ID>C63A3B24DB37898D</PERSISTENT_ID>
000029 </SELCTR_TRACK>
000030 <SELCTR_TRACK SEQ_NUMBER="4">
000031 <TRACK_NUM>4</TRACK_NUM>
000032 <NAME>Hand In My Pocket</NAME>
000033 <PERSISTENT_ID>B26EEC33174DCC60</PERSISTENT_ID>
000034 </SELCTR_TRACK>
000035 <SELCTR_TRACK SEQ_NUMBER="5">
000036 <TRACK_NUM>5</TRACK_NUM>
000037 <NAME>Right Through You</NAME>
000038 <PERSISTENT_ID>8276C65D2939EE3B</PERSISTENT_ID>
000039 </SELCTR_TRACK>
000040 <SELCTR_TRACK SEQ_NUMBER="6">
000041 <TRACK_NUM>6</TRACK_NUM>
000042 <NAME>Forgiven</NAME>
000043 <PERSISTENT_ID>74E398087479A309</PERSISTENT_ID>
0000013 7CAE81716880755D 13 You Oughta Know<
s1=InsLine s2=DelLine s3=DupLine s4=ACTION s5=MrkBox s6=MrkLine s7=SPLITJOIN s8=BoxFuncs s10=UNDO s11=REDO s12=ResetBox
Te | Line=1 | Col=1 | Alt=0,0;0 | Size=80 | Rec=16380 | Fmt=U | Files=2 | Views=2 | 2014/09/18 15:38:45
  
```

Scroll> Csr  
73

Scroll> Csr

Scroll> Csr

Scroll> Csr  
Lines 1-20 of 20  
nslation and other options.

(0=no limit)

Scroll> Csr

ial, USAM dataset or HFS path  
+ Member> PILL

Options:  
acters> NL NL|CR|LF|CRLF

OBID~	COLCOUNT	EDPROC	VA
8	3		
3	2		
14	16		

Figure 199. SELCOPYI DB2 Figure 22

Type the primary command **JSON** with no parameters to start an equivalent dialog to generate your **JavaScript Object Notation**.



## Handling Relational Constraint Errors

Next, as an exercise, we'll delete the artist **Bob Dylan** from our music collection.

- Use **F3** to exit as far as the **ARTIST** table.
- Enter "**D**" in the prefix area, or press the "**DelLine**" key (Shift-F2), to delete the **Bob Dylan** (ID=70) row.
- Press **F3** to exit and save, or type primary command **SAVE**.
- Because of the table's relational constraints, DB2 prevents an **ARTIST** row from being deleted while any **ALBUM** rows exist with the same foreign key.

In this case SELCOPYi, reinserts the deleted row at the top of the screen.

The row is flagged with **R-532** in the prefix area, indicating the **SQLCODE** encountered by the **SAVE**.

DB2(CBLA): Edit table TEST1.SELCTRNR\_ARTIST in tablespace TEST1.SELCTRNR

Command> ZZSD346I SAVE inserts=0 deletes=0 updates=0 SQL errors=1 for DB2 object TEST1.SELCTRNR\_ARTIST.

ID	NAME
R-532 70	Bob Dylan<
10	Adele<
20	Alabama Shakes<
30	Alabama 3<
40	Alanis Morissette<
50	Alex Harvey<
60	AC/DC<
80	Bruce Springsteen<
90	Bruce Springsteen & The Sessions Band<
100	Burt Bacharach & Elvis Costello<
110	Christina Aguilera<
120	Christina Aguilera & Dave Navarro<
130	Coldplay<
140	Crash Test Dummies<
150	Damien Rice<
160	David Gray<
170	Deep Purple<
180	Del Amitri<
190	Duffy<
200	DJ Fresh<
210	Embrace<
220	Florence + The Machine<
230	Gretchen Wilson<
240	Guns N' Roses<
250	Jennifer Hudson<
260	Jessie J<
270	John Mayer<
280	John Mellencamp<
290	Journey<
300	Judas Priest<
310	Kosheen<

PE DBNAME -TSNAME- -DBID- -OBJID- COLCOUNT EDPROC VA

PE	DBNAME	-TSNAME-	-DBID-	-OBJID-	COLCOUNT	EDPROC	VA
TEST1	SELCT16AS		473	8	3		
TEST1	SELCTRNR		473	3	2		
TEST1	SELCT1CNU		473	14	16		

Views 1 select \*

F5=RFIND F6=RCHANGE s1=InsLine s2=DelLine s3=DupLine s4=Options s5=ZoomW s10=UNDO s11=REDO

Se Line=0 Col=1 Alt=2,2;0 Size=73 Recl=84 Fmt=U Files=1 Views=1 2014/09/18 15:39:20

Figure 200. SELCOPYi: DB2 Figure 23



## The "E" edit line-command

Enter "E" in the prefix area to display the "DB2 Save SQL Error" dialog.

The screenshot shows the DB2 Command Line Editor (CLP) interface. The main window displays the table TEST1.SELCTRNR in tablespace TEST1.SELCTRNR. The table has columns ID, NAME, and SMINT. The data is displayed in a grid format with 31 rows. The table structure is as follows:

ID	NAME	SMINT
70	Bob Dylan	
10	Adele	
20	Alabama Shakes	
30	Alabama 3	
40	Alanis Morissette	
50	Alex Harvey	
60	AC/DC	
80	Bruce Springsteen	
90	Bruce Springsteen & The Sessions Band	
100	Burt Bacharach & Elvis Costello	
110	Christina Aguilera	
120	Christina Aguilera & Dave Navarro	
130	Coldplay	
140	Crash Test Dummies	
150	Damien Rice	
160	David Gray	
170	Deep Purple	
180	Del Amitri	
190	Duffy	
200	DJ Fresh	
210	Embrace	
220	Florence + The Machine	
230	Gretchen Wilson	
240	Guns N' Roses	
250	Jennifer Hudson	
260	Jessie J	
270	John Mayer	
280	John Mellencamp	
290	Journey	
300	Judas Priest	
310	Kosheen	

On the right side, there is a summary table with the following data:

PE	DBNAME	-TSNAME-	-DBID-	-OBJID-	COLCOUNT	EDPROC	VA
TEST1	SELCTRNR	473	8	3			
TEST1	SELCTRNR	473	3	2			
TEST1	SELCTRNR	473	14	16			

The bottom status bar shows the following information: F5=RFIND, F6=RCHANGE, s1=InsLine, s2=DelLine, s3=DupLine, s4=Options, s5=ZoomW, s10=UNDO, s11=REDO, Se | Line=0, Col=1, Alt=2,210, Size=73, Recl=84, Fmt=U, Files=1, Views=1, 2014/09/18 15:39:20.

Figure 201. SELCOPYi DB2 Figure 24

## The "DB2 Save SQL Error" dialog

The "DB2 Save SQL Error" dialog provides a detailed explanation of the SQL error, and identifies the parent and dependent column names.

It also gives you the opportunity to correct the violation using the **Related Table Edit (REDIT)** feature.

- Enter "R" in the "Action>" field to start **Related Table edit**.

The screenshot shows the DB2 command line editor with the following components:

- Table: TEST1.SELCTR\_ARTIST**

ID	NAME
70	Bob Dylan
- DB2 Save SQL Error** dialog:
  - DB2 has reported a DELETE rule violation SQLCODE -532.
  - Relationship: ALBUMR1
  - Parent: TEST1.SELCTR\_ARTIST
  - Dependent: TEST1.SELCTR\_ALBUM
  - Action> **R** (Selected)
  - Options: CANCEL (Cancel the edit session), EXIT (Return to the edit session), REDIT (Edit the related table)
- Foreign Key** section:
 

Parent column	Dependent column	Column value
ID	ARTIST_ID	70
- Table Data** (bottom of the editor):
 

ID	NAME
280	John Mellencamp
290	Journey
300	Judas Priest
310	Kosheen
- System Information** (bottom status bar):
 

PE	DBNAME	-TSNAME-	-DBID-	-OBID-	COLCOUNT	EDPROC	VA
TEST1	SELCT16AS	473	8	3			
TEST1	SELCTRNR	473	3	2			
TEST1	SELCT1CNU	473	14	16			

Figure 202. SELCOPY: DB2 Figure 25

## Releasing locks on Dependent Tables

If locks on dependent tables are held by DB2, then they must be released before continuing.

- Enter "2" to "Rollback outstanding changes".

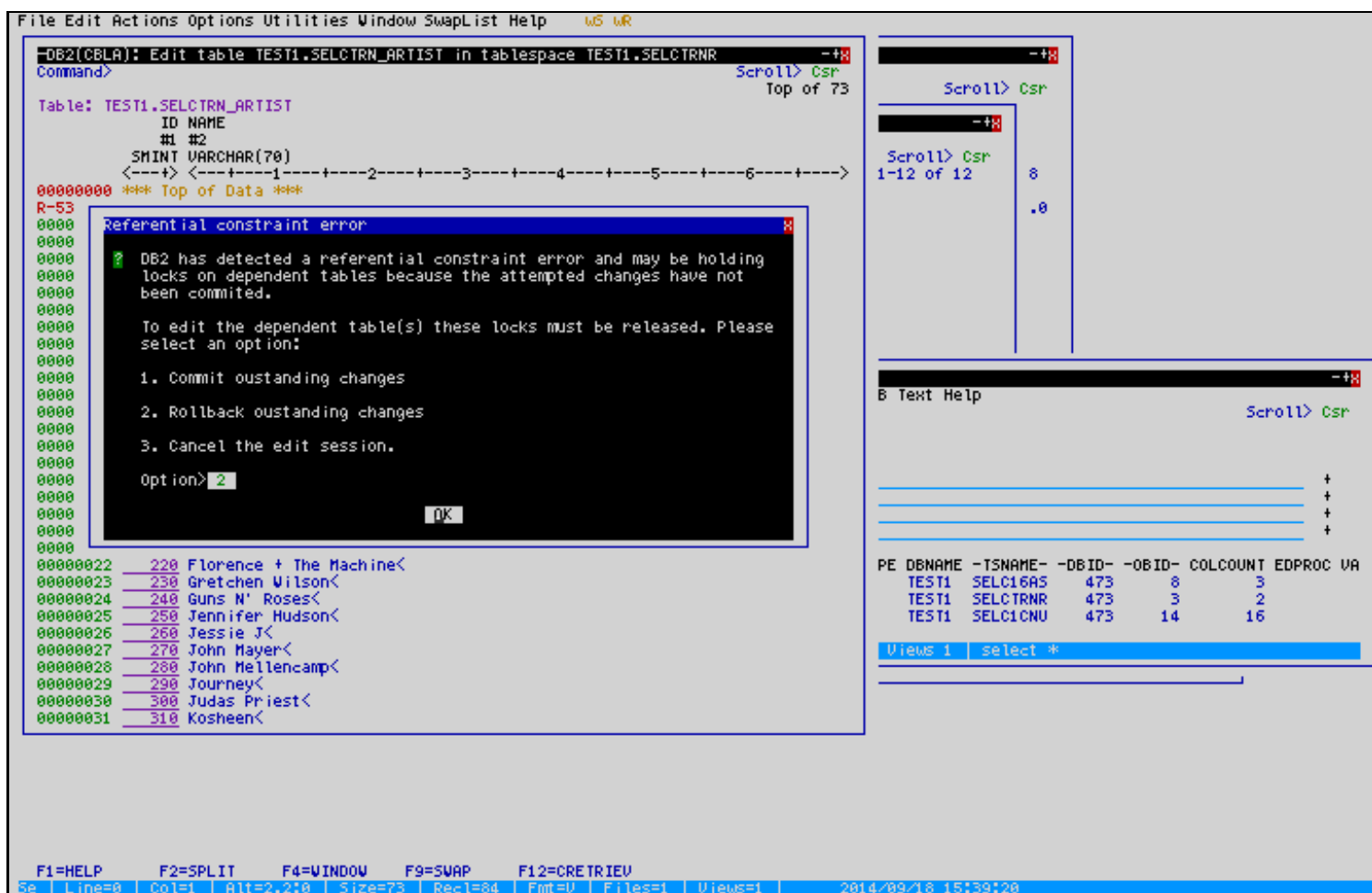


Figure 203. SELCOPYi DB2 Figure 26

## Edit Dependent Table (1)

The **ALBUM** table is edited, displaying only rows matching the foreign key for the artist Bob Dylan (**ARTIST\_ID=70**).

We'll attempt to delete "The Essential Bob Dylan", expecting a similar problem due to the existence of "TRACK" table rows matching this album.

- Enter "D" to delete "The Essential Bob Dylan".
- Press **F3** to exit and save, or type primary command **SAVE**.

The reinserted row is flagged with **R-532** in the prefix area.

- Enter "E" in the prefix area to display the "DB2 Save SQL Error" dialog.
- Enter "R" in the "Action>" field to start **Related Table** edit.

The screenshot displays the DB2 CBLA interface with three overlapping windows:

- Top Window (Table: TEST1.SELCTR\_ARTIST):** Shows a list of artists. The row for Bob Dylan (ARTIST\_ID=70) is highlighted. The prefix area shows "R-532" and "70 Bob Dylan".
- Middle Window (Table: TEST1.SELCTR\_ALBUM):** Shows the dependent table filtered by ARTIST\_ID=70. The row for "The Essential Bob Dylan" (ALBUM\_ID=150) is highlighted. The prefix area shows "R-532" and "70 150 The Essential Bob Dylan".
- Bottom Window (DB2 Save SQL Error):** Displays an error message: "DB2 has reported a DELETE rule violation SQLCODE -532. Relationship: TRACKR1 Delete rule: Restrict. Parent: TEST1.SELCTR\_ALBUM. Dependent: TEST1.SELCTR\_TRACK. A DELETE operation attempted to delete a specified row and all dependent rows in dependent tables but this relationship's DELETE rule prevented it." The "Action>" field is set to "REDIT".

The bottom status bar shows the following information: F1=HELP, F2=SPLIT, F4=WINDOW, F5=Select, F6=Deselect, F9=SWAP, F12=CRETRIEU, s2=EXPAND, s5=ZOOM, s10=UNDO, s11=REDO, Se | Line=0, Col=1, Alt=2,210, Size=1, Rec=99, Fmt=U, Files=2, Views=2, 2014/09/18 15:40:55.

Figure 204. SELCOPYI DB2 Figure 27

## Edit Dependent Table (2)

The **TRACK** table is edited, displaying only rows matching the foreign key for the album "**The Essential Bob Dylan**" (**ALBUM\_ID=150**).

- Enter **D\*** in the prefix area of the first line to delete all rows.
- Press **F3** to exit and save.

No constraint rule is broken so the save will succeed without any drama.

The screenshot shows the DB2 Command Editor with the 'Edit Dependent Table' window open. The window title is 'DB2(CBLA): Edit related table TEST1.SELCTR\_TRACK in tablespace TEST1.SELC1CNU'. The table being edited is 'TEST1.SELCTR\_TRACK' with columns 'ALBUM\_ID', 'TRACK\_NUM', and 'NAME'. The table is dependent on 'TEST1.SELCTR\_ALBUM' with constraint 'TRACKR1(R)'. The table structure is shown as follows:

ALBUM_ID	TRACK_NUM	NAME
150	1	Blowin' In the Wind
150	2	Shelter from the Storm
150	3	Don't Think Twice, It's All Right
150	4	Hurricane
150	5	The Times They Are A-Changin'
150	6	Gotta Serve Somebody
150	7	It Ain't Me, Babe
150	8	Groom's Still Waiting At the Altar
150	9	Maggie's Farm
150	10	Jokerman
150	11	Everything Is Broken
150	12	It's All Over Now, Baby Blue
150	13	Mr. Tambourine Man
150	14	Blind Willie McTell
150	15	Subterranean Homesick Blues
150	16	Not Dark Yet
150	17	Make You Feel My Love
150	18	Like a Rolling Stone
150	19	Positively 4th Street
150	20	Dignity (Alternate Version)
150	21	I Want You
150	22	Things Have Changed
150	23	Just Like a Woman
150	24	Mississippi
150	25	Rainy Day Women #12 & 35
150	26	Thunder On the Mountain
150	27	All Along the Watchtower
150	28	When the Deal Goes Down
150	29	Lay, Lady, Lay
150	30	Beyond Here Lies Nothin'
150	31	If Not for You

The bottom status bar shows the following information: F5=RFIND, F6=RCHANGE, s1=InsLine, s2=DelLine, s3=DupLine, s4=Options, s5=ZoomW, s10=UNDO, s11=REDO. The date and time are 2014/09/18 15:41:19.

Figure 205. SELCOPY: DB2 Figure 28

## Edit Dependent Table (3)

Back in the **ALBUM** table, you will then be able to delete **"The Essential Bob Dylan"**, save and exit without errors.

Back in the **ARTIST** table, you will then be able to delete **"Bob Dylan"** and save without errors.

DB2(CBLA): Edit table TEST1.SELCTRN\_ARTIST in tablespace TEST1.SELCTNR

Command>   
 2250346I SAVE inserts=0 deletes=1 updates=0 SQL errors=0 for DB2 object  
 TEST1.SELCTRN\_ARTIST.  
 2250347I Commit changes issued.

## #2  
 SMINT VARCHAR(70)  
 <---+> <---+> 1-----2-----3-----4-----5-----6----->

00000000 \*\*\* Top of Data \*\*\*  
 00000001 10 Adele<  
 00000002 20 Alabama Shakes<  
 00000003 30 Alabama 3<  
 00000004 40 Alanis Morissette<  
 00000005 50 Alex Harvey<  
 00000006 60 AC/DC<  
 00000007 80 Bruce Springsteen<  
 00000008 90 Bruce Springsteen & The Sessions Band<  
 00000009 100 Burt Bacharach & Elvis Costello<  
 00000010 110 Christina Aguilera<  
 00000011 120 Christina Aguilera & Dave Navarro<  
 00000012 130 Coldplay<  
 00000013 140 Crash Test Dummies<  
 00000014 150 Damien Rice<  
 00000015 160 David Gray<  
 00000016 170 Deep Purple<  
 00000017 180 Del Amitri<  
 00000018 190 Duffy<  
 00000019 200 DJ Fresh<  
 00000020 210 Embrace<  
 00000021 220 Florence + The Machine<  
 00000022 230 Gretchen Wilson<  
 00000023 240 Guns N' Roses<  
 00000024 250 Jennifer Hudson<  
 00000025 260 Jessie J<  
 00000026 270 John Mayer<  
 00000027 280 John Mellencamp<  
 00000028 290 Journey<  
 00000029 300 Judas Priest<  
 00000030 310 Kosheen<  
 00000031 320 Led Zeppelin<

Scroll> Csr  
 1-12 of 12  
 8  
 .0

B Text Help  
 Scroll> Csr

PE	DBNAME	-TSNAME-	-DBID-	-OBJID-	COLCOUNT	EDPROC	VA
TEST1	SELCT16AS	473	8	3			
TEST1	SELCTNR	473	3	2			
TEST1	SELCT1CNU	473	14	16			

Views 1 | select \*

F5=RFIND F6=RCHANGE s1=InsLine s2=DelLine s3=DupLine s4=Options s5=ZoomW s10=UNDO s11=REDO  
 Se | Line=0 Col=1 | Alt=0,0j0 | Size=72 | Recl=84 | Fmt=U | Files=1 | Views=1 | 2014/09/18 15:41:52

Figure 206. SELCOPYi DB2 Figure 29

## DB2 Help Pages

Further DB2 specific information is available by pressing the **HELP** key (F1).

The screenshot displays the DB2 Table Browse and Edit window. The main window shows a table named TEST1.SELCTRN\_ARTIST in tablespace CBLA. The table has two columns: ID (SMINT) and NAME (VARCHAR(70)). The data is displayed in a grid with 31 rows, showing artist names like Adele, Alabama Shakes, Alabama 3, Alanis Morissette, Alex Harvey, AC/DC, Bruce Springsteen, Bruce Springsteen & The Sessions Band, Burt Bacharach & Elvis Costello, Christina Aguilera, Coldplay, Crash Test Dummies, Damien Rice, David Gray, Deep Purple, Del Amitri, Duffy, DJ Fresh, Embrace, Florence + The Machine, Gretchen Wilson, Guns N' Roses, Jennifer Hudson, Jessie J, John Mayer, John Mellencamp, Journey, Judas Priest, Kosheen, and Led Zeppelin.

The right sidebar contains the DB2 Table Browse and Edit help page. It includes a table of contents with links to previous, next, and contents. The main text describes the SELCOPY/i structured data editor (SDE) and provides introductory information about working with DB2 data in structured edit. It lists topics such as starting a DB2 table edit or browse session, how DB2 subsystem connections are managed, limiting the number of rows loaded, defining a structure to use with DB2 tables, how DB2 rows are saved, dealing with save errors, auditing edit sessions, editing or browsing related tables, useful commands, and comparing DB2 table edit with dataset edit.

The bottom status bar shows the following information: F3=BACK, F5=TEXT, F6=SOURCE, F7=UP, F8=DOWN, S4=FORWARD, Se Line=0, Col=1, Alt=0,010, Size=72, Recl=84, Fmt=U, Files=1, Views=1, 2014/09/18 15:41:52.

Figure 207. SELCOPYi DB2 Figure 30

## Related Tables Help

The hyperlink for "**Editing or browsing related tables**" provides some handy background and tips.

The screenshot shows the DB2 Table Browse and Edit window. The left pane displays the table structure for TEST1.SELCTRN\_ARTIST, showing columns ID, NAME, #1, and #2. The right pane provides detailed information about the table, including its purpose, constraints, and useful commands.

**Table: TEST1.SELCTRN\_ARTIST**

ID	NAME	#1	#2
00000001	Adele<		
00000002	Alabama Shakes<		
00000003	Alabama 3<		
00000004	Alanis Morissette<		
00000005	Alex Harvey<		
00000006	AC/DC<		
00000007	Bruce Springsteen<		
00000008	Bruce Springsteen & The Sessions Band<		
00000009	Burt Bacharach & Elvis Costello<		
00000010	Christina Aguilera<		
00000011	Christina Aguilera & Dave Navarro<		
00000012	Coldplay<		
00000013	Crash Test Dummies<		
00000014	Damien Rice<		
00000015	David Gray<		
00000016	Deep Purple<		
00000017	Del Amitri<		
00000018	Duffy<		
00000019	DJ Fresh<		
00000020	Embrace<		
00000021	Florence + The Machine<		
00000022	Gretchen Wilson<		
00000023	Guns N' Roses<		
00000024	Jennifer Hudson<		
00000025	Jessie J<		
00000026	John Mayer<		
00000027	John Mellencamp<		
00000028	Journey<		
00000029	Judas Priest<		
00000030	Kosheen<		
00000031	Led Zeppelin<		

**DB2 Table Browse and Edit**

Back Forward HomeLink Close Source Text Help

Command> Scroll> CSR

**Editing or browsing related tables**

SELCOPY/i has specific support for editing tables which have relationships defined by referential integrity (RI) constraints.

An RI constraint establishes a parent-dependent relationship between two tables by means of a foreign key. A foreign key is a set of columns in the dependent table which correspond to a unique key in the parent table.

When an RI constraint exists certain types of change to the tables involved are not permitted. Breaking these rules leads to an RI error of one of the following types:

- Missing parent key SQLCODE -530. This happens when an insert or update of a row in a dependent table has a foreign key which does not represent an existing row in the parent table. In other words you cannot make orphans by inserting or updating foreign keys in the dependent table.
- Parent key update error SQLCODE -531. This happens when an update of a row in a parent table changes a key which is a foreign key in a dependent table and has dependent rows in that table. In other words you cannot make orphans by changing parent keys.
- RI delete rule violation SQLCODE -532. When the RI constraint was defined with a delete rule of RESTRICT or NO ACTION this error will happen when deleting a row in the parent table which has dependent rows in the dependent table. In other words for this type of RI constraint deletes must be done from the bottom up.

The **DE** prefix command and **REDIT** primary command can be used in a number of ways with tables related by RI constraints:

- List all parent and dependent relationships for the current table.
- Edit or browse the parent row or dependent rows of the **focus row** for any RI constraint.
- After an RI error when saving changes, edit the parent row or dependent rows of the row which had the error.

**Useful commands**

Some commands are specifically for DB2 table edit. The following overview is not exhaustive but highlights some of the features:

Line 225 of 389 Col 1 of 78 File: CBL.CBLI330.HTML(zzscdb2e)

F3=BACK F5=TEXT F6=SOURCE F7=UP F8=DOWN S4=FORWARD

Se Line=0 Col=1 Alt=0,070 Size=72 Recl=84 Fmt=U Files=1 Views=1 2014/09/18 15:41:52

Figure 208. SELCOPYi DB2 Figure 31



## REDIT Example (1)

In the ARTIST table scroll down to "**Ray Lamontagne**" (ID=480), and notice we also have an entry for "**Ray LaMontagne**" (ID=490).

We'll consolidate these two, then remove (ID=490).

- Enter "RE" in the prefix area for artist ID=490.

The screenshot shows the REDIT database editor interface. The main window displays the table `TEST1.SELCTR_ARTIST` with the following data:

ID	NAME
480	Ray Lamontagne<
490	Ray LaMontagne<
500	Ray LaMontagne & the Pariah Dogs<
510	Ray LaMontagne & The Pariah Dogs<
520	Raycharles Lamontagne<
530	Raycharles LaMontagne<
540	Rebecca Ferguson<
550	Roachford<
560	Robert Plant & Alison Krauss<
570	Sam Cooke<
580	Seth Lakeman<
590	Simon & Garfunkel<
600	Sonique<
610	Soul Asylum<
620	Stevie Nicks<
630	Stone Temple Pilots<
640	The Civil Wars<
650	The Sundays<
660	Thin Lizzy<
670	Train<
680	Turin Brakes<
690	U2<
700	U2 & B.B. King<
710	Whitesnake<
720	Whitney Houston<
730	2Pac & Dr. Dre<

The entry for ID 490 is highlighted with a red prefix "RE". The status bar at the bottom shows the following information:

F5=RFIND F6=RCHANGE s1=InsLine s2=DelLine s3=DupLine s4=Options s5=ZoomW s10=UNDO s11=REDO  
 Se Line=47 Col=1 Alt=0,0;0 Size=72 Recl=84 Fmt=U Files=1 Views=1 2014/09/18 15:42:52

Figure 209. SELCOPY: DB2 Figure 32

## REDIT Example (2)

- A separate edit window will display only the **ALBUM** rows for (**ARTIST\_ID=490**).
- Type primary command "**CHANGE ALL 490 480 #3**", then exit and save changes.

DB2(CBLA): Edit table TEST1.SELCTR\_ARTIST in tablespace TEST1.SELCTRNR

Table: TEST1.SELCTR\_ARTIST

ID	NAME
480	Ray LaMontagne<
490	Ray LaMontagne<

DB2(CBLA): Edit related table TEST1.SELCTR\_ALBUM in tablespace TEST1.SELC16AS

225D2121 6 (out of 6) occurrences were changed in 6 (out of 6) records of type SELCTR\_ALBUM.

ARTIST_ID	ID	NAME
480	1000	Gossip In the Grain<
480	1090	Jolene (Live from Union Chapel) - Single<
480	1100	Raycharles LaMontagne<
480	1110	Till the Sun Turns Black<
480	1120	Trouble<
480	1130	Trouble - Live Session (Live at The Chapel, London) - EP<

PE	DBNAME	-TSNAME-	-DBID-	-OBJID-	COLCOUNT	EDPROC	VA
TEST1	SELCL6AS		473	8	3		
TEST1	SELCTRNR		473	3	2		
TEST1	SELCLCNU		473	14	16		

Views 1 select \*

F5=RFIND F6=RCHANGE s1=InsLine s2=DelLine s3=DupLine s4=Options s5=ZoomW s10=UNDO s11=REDO

Se Line=0 Col=1 Alt=1,1,1 Size=6 Rec=39 Fmt=U Files=2 Views=2 2014/09/18 15:46:37

Figure 210. SELCOPY: DB2 Figure 33

## REDIT Example (3)

We can now delete (**ARTIST\_ID=490**), save and exit without error.

DB2(CBLA): Edit table TEST1.SELCTRNR\_ARTIST in tablespace TEST1.SELCTRNR

Command> Z2SD346I SAVE inserts=0 deletes=0 updates=6 SQL errors=0 for DB2 object TEST1.SELCTRNR\_ALBUM.

Z2SD347I Commit changes issued.

#1	#2	SMINT	VARCHAR(70)
00000047	480	Ray LaMontagne<	
00000048	490	Ray LaMontagne<	
00000049	500	Ray LaMontagne & the Pariah Dogs<	
00000050	510	Ray LaMontagne & The Pariah Dogs<	
00000051	520	Raycharles LaMontagne<	
00000052	530	Raycharles LaMontagne<	
00000053	540	Rebecca Ferguson<	
00000054	550	Roachford<	
00000055	560	Robert Plant & Alison Krauss<	
00000056	570	Sam Cooke<	
00000057	580	Seth Lakeman<	
00000058	590	Simon & Garfunkel<	
00000059	600	Sonique<	
00000060	610	Soul Asylum<	
00000061	620	Stevie Nicks<	
00000062	630	Stone Temple Pilots<	
00000063	640	The Civil Wars<	
00000064	650	The Sundays<	
00000065	660	Thin Lizzy<	
00000066	670	Train<	
00000067	680	Turin Brakes<	
00000068	690	U2<	
00000069	700	U2 & B.B. King<	
00000070	710	Whitesnake<	
00000071	720	Whitney Houston<	
00000072	730	2Pac & Dr. Dre<	
00000073		*** End of Data ***	

PE DBNAME -TSNAME- -DBID- -OBID- COLCOUNT EDPROC VA

PE	DBNAME	-TSNAME-	-DBID-	-OBID-	COLCOUNT	EDPROC	VA
TEST1	SELCL6AS		473	8	3		
TEST1	SELCTRNR		473	3	2		
TEST1	SELCLCNU		473	14	16		

Views 1 | select \*

F5=RFIND F6=RCHANGE s1=InsLine s2=DelLine s3=DupLine s4=Options s5=ZoomW s10=UNDO s11=REDO

Se | Line=47 | Col=1 | Alt=0,0;0 | Size=72 | Recl=84 | Fmt=U | Files=1 | Views=1 | 2014/09/18 15:46:50

Figure 211. SELCOPYi DB2 Figure 34