



ISPF Crazy With Some CUCI Usermods Like These
(Tom Conley)

ISPF is Dead.....



- IBM's investment in ISPF has been steadily dwindling
- z/OS V2R1 had 5 pages of enhancements
- z/OS V2R2 had 3 pages of enhancements
- z/OS V2R3 had two line items
- z/OS V2R4 Preview?
 - ISPF Upper Case function for Japanese clients (available for V2R3)
 - Withdrawal of ISPF Workstation Agent (WSA) after V2R4
- ISPF is no longer strategic for IBM
- z/OSMF strategic platform going forward for sysprogs
- IBM Developer for z Systems Enterprise Edition strategic platform for developers
- Future enhancements to ISPF likely limited to infrastructure support (e.g. 8-character TSO id support)

LONG LIVE ISPF!!



- In August 2017, I began to work on user-driven ISPF enhancements
- CBT Usermod Collection for ISPF (CUCI) was born
- Download [File967](http://www.cbttape.org) at <http://www.cbttape.org>
- All enhancements via usermod, no manual hacks allowed
- First release V1R0 delivered on 11/16/2017, small proof of concept
- Satisfied two RFE's
 - RFE 112749 - Update ISPCMDS table entries for Minimum TRUNC values (e.g. UDLIST should be 3)
 - RFE 112745 - Add DSL as a synonym for the DSLIST command
- Created ISPCMDS table member with abbreviated commands

Default ISPCMD5

```
zPDT
File Edit Font Transfer Macro Options Window Help

Menu Utilities Help

Display ISPCMD5 Row 10 to 24 of 92
Command ==> Scroll ==> CSR

The command table is currently open, it cannot be modified. Use the view(V)
row command to see an entire entry.

Verb T Action
-----
CRETRIEV 0 CRETRIEV
CUAATTR 0 SELECT PGM(ISPOPT) PARM(ISPOPT11) SCRNAME(SETTINGS)
CURSOR 0 CURSOR
DDLST 0 SELECT PGM(ISRDDN) NEWAPPL(ISR) SUSPEND SCRNAME(DDLST) PARM
DOWN 0 SETVERB
DSLST 0 SELECT PGM(ISRDSLST) PARM(DSL &ZPARM) SUSPEND SCRNAME(DSLST)
DTEST 0 SELECT PGM(ISPYDTST) PARM(&ZPARM) NOFUNC SCRNAME(DTEST)
END 0 SETVERB
ENVIRON 0 SELECT PGM(ISPENV) PARM(&ZPARM) SCRNAME(SETTINGS)
EPDF 0 SELECT CMD(%ISREPDF &ZPARM) NEWAPPL(ISR) SUSPEND
EXHELP 0 SELECT PGM(ISPTUTOR) PARM(&ZPARM) NOFUNC SCRNAME(HELP)
EXIT 0 EXIT
EXPAND 0 SETVERB
FKA 0 SELECT PGM(ISPOPF) PARM(FKA,&ZPARM) NOFUNC SUSPEND
HELP 0 SELECT PGM(ISPTUTOR) PARM(&ZPARM) NOFUNC SCRNAME(HELP)
```

MR 0.0 a 4,15

Updated ISPCMDS

zPDT

File Edit Font Transfer Macro Options Window Help

Menu Utilities Help

Display ISPCMDS Row 10 to 24 of 92

Command ==> Scroll ==> CSR

The command table is currently open, it cannot be modified. Use the view(V) row command to see an entire entry.

Verb	T	Action
CRETRIEV	4	CRETRIEV
CUAATTR	0	SELECT PGM(ISPOPT) PARM(ISPOPT11) SCRNAME(SETTINGS)
CURSOR	0	CURSOR
DDLST	3	SELECT PGM(ISRDDN) NEWAPPL(ISR) SUSPEND SCRNAME(DDLST) PARM
DOWN	0	SETVERB
DSLST	3	SELECT PGM(ISRDSLST) PARM(DSL &ZPARM) SUSPEND SCRNAME(DSLST)
DTEST	0	SELECT PGM(ISPYDTST) PARM(&ZPARM) NOFUNC SCRNAME(DTEST)
END	0	SETVERB
ENVIRON	3	SELECT PGM(ISPENV) PARM(&ZPARM) SCRNAME(SETTINGS)
EPDF	0	SELECT CMD(%ISREPDF &ZPARM) NEWAPPL(ISR) SUSPEND
EXHELP	0	SELECT PGM(ISPTUTOR) PARM(&ZPARM) NOFUNC SCRNAME(HELP)
EXIT	0	EXIT
EXPAND	3	SETVERB
FKA	0	SELECT PGM(ISPOPF) PARM(FKA,&ZPARM) NOFUNC SUSPEND
HELP	0	SELECT PGM(ISPTUTOR) PARM(&ZPARM) NOFUNC SCRNAME(HELP)

MA 0.0 a 4,15

ISPCMDS Usermod (No Hacks Allowed!)

```
//IBUSERU JOB 'IBUSER',CLASS=A,NOTIFY=&SYSUID,
//          MSGCLASS=X,REGION=0M,TIME=NOLIMIT,MSGLEVEL=(1,1)
//*****
//APPLYUM EXEC PGM=GIMSMP
//SYSPRINT DD SYSOUT=*
//SMPCSI DD DISP=SHR,DSN=yourhlq.GLOBAL.CSI <=== YOUR ISPF CSI
//CBTFILE DD DISP=SHR,DSN=yourhlq.CBT.FILE967 <=== CBT FILE
//SMPCNTL DD *
    SET BDY(GLOBAL) .
    RECEIVE S(UMISPCM) SYSMODS.
    SET BDY(target) . /* <=== YOUR TARGET ZONE */
    APPLY S(UMISPCM) CHECK.
    APPLY S(UMISPCM) .
/*
//SMPPTFIN DD DATA,DLM=@@
++USERMOD(UMISPCM) REWORK(20173190) . /*<=== RESET REWORK IF NEEDED */
++VER (Z038) FMID(HIF7R02) . /*<=== YOUR ISPF FMID (ADD PRE IF NEEDED) */
++TBLENU(ISPCMDS) DISTLIB(AISPTENU) TXLIB(CBTFILE) .
@@
```

CUCI Release V1R1



- During 2018, attempted two other ISPF enhancements (and 1 z/OS)
 - RFE 128561 - ISPF OPT 3.4 block delete commands should delete VSAM cluster, and bypass DATA and INDEX components without stopping
 - RFE 120120 - ISPF 3.17 Should Reset UID on Exit Back to User UID from SU
 - RFE 102407 - ISPF UDLIST - for reset to users default UID on exit (same as above RFE 120120)
 - Modified ISHELL to reset user's default UID on exit (z/OS usermod)
- Experienced multiple coding difficulties
- Finally delivered on 12/24/2018 (My 2018 Christmas gift to you)

Block DELETES in ISPF 3.4 Deleting VSAM Without Stopping

```
zPDT
File Edit Font Transfer Macro Options Window Help

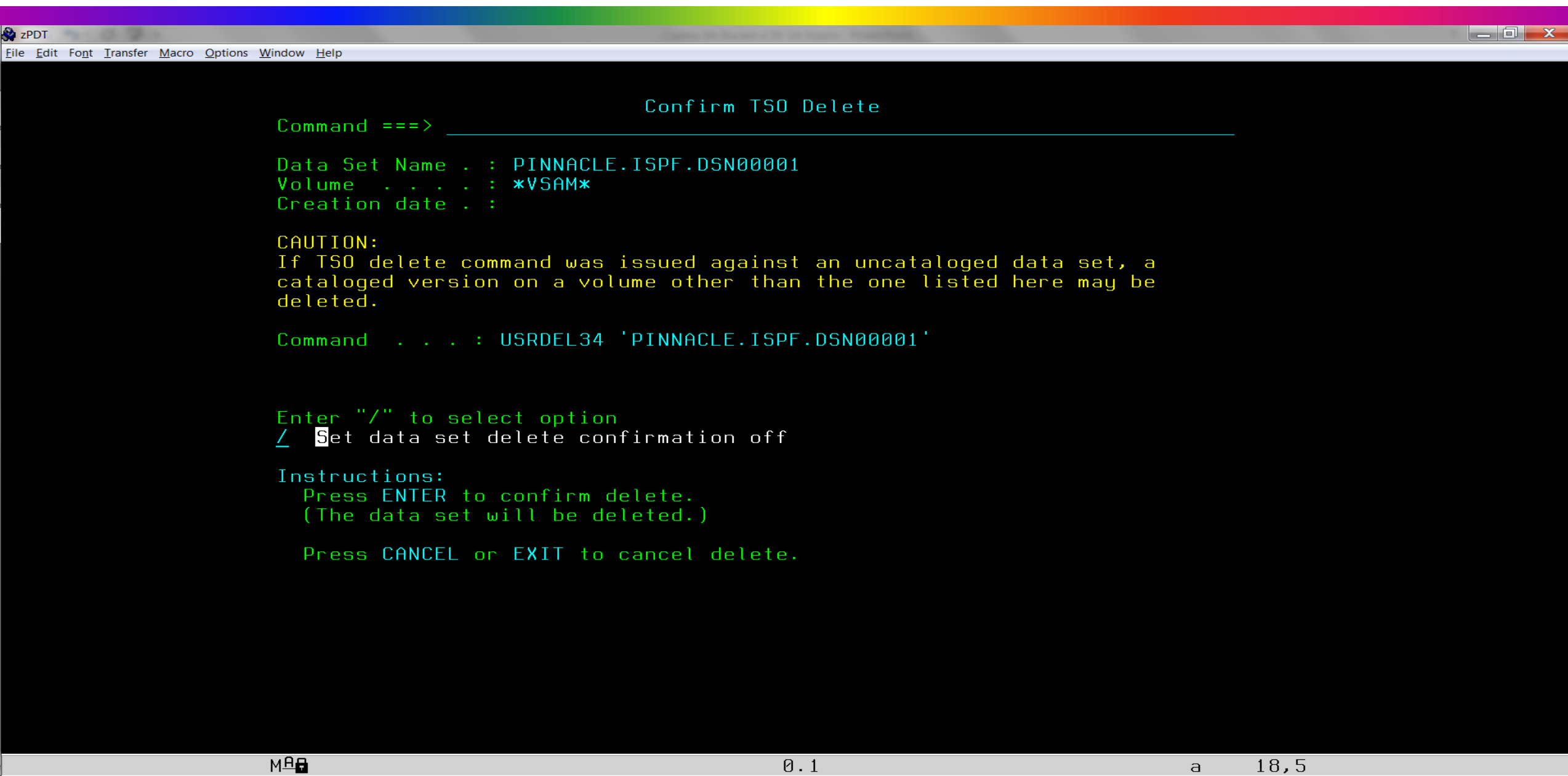
Menu Options View Utilities Compilers Help

DSLIST - Data Sets Matching PINNACLE.ISPF.DSN* Row 1 of 198
Command ==>  Scroll ==> CSR

Command - Enter "/" to select action Message Volume
-----
//d PINNACLE.ISPF.DSN00001 *VSAM*
      PINNACLE.ISPF.DSN00001.DATA USER00
      PINNACLE.ISPF.DSN00001.INDEX USER00
      PINNACLE.ISPF.DSN00002 *VSAM*
      PINNACLE.ISPF.DSN00002.DATA USER00
      PINNACLE.ISPF.DSN00002.INDEX USER00
      PINNACLE.ISPF.DSN00003 *VSAM*
      PINNACLE.ISPF.DSN00003.DATA USER00
      PINNACLE.ISPF.DSN00003.INDEX USER00
      PINNACLE.ISPF.DSN00004 *VSAM*
      PINNACLE.ISPF.DSN00004.DATA USER00
      PINNACLE.ISPF.DSN00004.INDEX USER00
      PINNACLE.ISPF.DSN00005 *VSAM*
      PINNACLE.ISPF.DSN00005.DATA USER00
      PINNACLE.ISPF.DSN00005.INDEX USER00
      PINNACLE.ISPF.DSN00006 *VSAM*
      PINNACLE.ISPF.DSN00006.DATA USER00
      PINNACLE.ISPF.DSN00006.INDEX USER00
      PINNACLE.ISPF.DSN00007 USER11
      PINNACLE.ISPF.DSN00008 USER07
      PINNACLE.ISPF.DSN00009 USERE2
      PINNACLE.ISPF.DSN00010 *VSAM*
      PINNACLE.ISPF.DSN00010.DATA USER00
      PINNACLE.ISPF.DSN00010.INDEX USER00
// PINNACLE.ISPF.DSN00011 *VSAM*
```

MA 0.0 a 4, 15

Block DELETEDs in ISPF 3.4 Deleting VSAM Without Stopping



The screenshot shows a terminal window titled 'zPDT' with a menu bar (File, Edit, Font, Transfer, Macro, Options, Window, Help) and a rainbow-colored title bar. The main display area is black with green and yellow text. The text is as follows:

```
Confirm TSO Delete

Command ==> _____

Data Set Name . : PINNACLE.ISPF.DSN00001
Volume . . . . : *VSAM*
Creation date . :

CAUTION:
If TSO delete command was issued against an uncataloged data set, a
cataloged version on a volume other than the one listed here may be
deleted.

Command . . . : USRDEL34 'PINNACLE.ISPF.DSN00001'

Enter "/" to select option
/ ☒ Set data set delete confirmation off

Instructions:
  Press ENTER to confirm delete.
  (The data set will be deleted.)

  Press CANCEL or EXIT to cancel delete.
```

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

MA 0.1 a 18,5

Block DELETEs in ISPF 3.4 Deleting VSAM Without Stopping

```
zPDT
File Edit Font Transfer Macro Options Window Help

Menu Options View Utilities Compilers Help

DSLIST - Data Sets Matching PINNACLE.ISPF.DSN* Row 1 of 198
Command ==> Scroll ==> CSR

Command - Enter "/" to select action Message Volume
-----
PINNACLE.ISPF.DSN00001 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00001.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00001.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00002 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00002.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00002.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00003 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00003.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00003.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00004 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00004.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00004.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00005 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00005.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00005.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00006 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00006.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00006.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00007 USRDEL34 RC=0 USER11
PINNACLE.ISPF.DSN00008 USRDEL34 RC=0 USER07
PINNACLE.ISPF.DSN00009 USRDEL34 RC=0 USERE2
PINNACLE.ISPF.DSN00010 USRDEL34 RC=0 *VSAM*
PINNACLE.ISPF.DSN00010.DATA USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00010.INDEX USRDEL34 RC=4 USER00
PINNACLE.ISPF.DSN00011 USRDEL34 RC=0 *VSAM*
```

MA 9.1 a 32,2

Block DELETES in ISPF 3.4 Deleting VSAM Without Stopping

- Rexx exec USRDEL34 invokes IDCAMS and suppresses messages
- Any errors from IDCAMS set RC=4 to bypass ISPF error handling
- Note RC=4 for DATA and INDEX components
- Panel ISRUDSLO ignores errors, bypasses dataset, and continues
- RACF and I/O errors will also be bypassed
- After block delete, issue REFRESH command to see updated list

Block DELETEDs in ISPF 3.4 Deleting VSAM Without Stopping

- Panel Rexx in ISRUDSLO)PROC injecting USRDEL34 command

```
do i = 1 to #lines
  endpos      = i * 80
  startpos    = endpos - 79
  parse var zdata begzdata =(startpos) scrnline =(endpos) rstzdata
  parse upper var scrnline 1 attr 2 command 6 13 rstline
  if command = '//D ' then
    zdata = begzdata      ||,
    attr   = attr         ||,
    '//USRDEL34 ' ||,
    rstline = rstline     ||,
    rstzdata
end
```

Block DELETEs in ISPF 3.4 Deleting VSAM Without Stopping

- Panel Rexx in ISRUDSLO)INIT to bypass errors on DELETE

```
do i = 1 to #lines
  <snip>
  parse var zdata begzdata =(startpos) scrnline =(endpos) rstzdata
  parse upper var scrnline 1 attr 2 command 11 rstline
  if command = 'USRDEL34 ' then
    do
      zdata = begzdata      ||,
              attr          ||,
              '              ' ||,
              rstline        ||,
              rstzdata
      usrdlbyp = 'BYPASS'
      leave i
    end
end
end
```

Block DELETEs in ISPF 3.4 Deleting VSAM Without Stopping

- If "bypass" flag is set, simulate enter to continue processing

```
IF (&USRDLBYP = 'BYPASS')  
  .MSG = ''  
  .RESP=ENTER
```

ISPF 3.17 Reset UID to Default on Exit

```
/* **** */
/* The following code is added to ensure that the UID is reset to the */
/* user's default UID upon exit from 3.17. This is necessary if the */
/* user entered SUPERUSER mode while in 3.17. */
/* **** */
IF (.RESP = 'END')
  *REXX(ZINIUID ZEUID)
    call syscalls('ON')
    address syscall 'seteuid' ziniuid
    address syscall 'getuid'
    zusruid = retval
    address syscall 'geteuid'
    zeuid = retval
  *ENDREXX
```

CUCI Release V1R2

- Release V1R2 delivered on 01/28/2019
 - RFE 122097 - ISPF EDIT highlighting for FORTRAN
 - RFE 117386 - ISPF EDIT highlighting for SQL
 - RFE 79228 - ISPF EDIT highlighting for SQL
 - RFE 57717 - ISPF EDIT highlighting for SQL
 - RFE 37007 - ISPF EDIT highlighting for SQL
 - RFE 107568 - ISPF EDIT highlighting for CARLa
 - RFE 83017 - ISPF EDIT highlighting for shell script
 - RFE 83016 - ISPF EDIT highlighting for Java
 - RFE 112741 - Simplify UNIX file access in ISPF by prepending current Unix directory to filename for COMPARE, COPY, CREATE, and REPLACE commands (BROWSE, EDIT, and VIEW require member names and continue to issue "Invalid member name" error message)

EDIT Highlighting for Java, SQL, etc!

- At SHARE in San Jose, my life changed
- Pedro Vera presented Customizing the ISPF HILITE Command
- Pedro showed how to manipulate EDIT data for highlighting
- Block DELETE code showed me how to manipulate panel dynamic area
- Armed with Pedro's ground-breaking work and block DELETE code, language highlighting was doable
- Discovered that reliable keyword highlighting requires blank delimiters
- All special characters converted to blanks (attributes, parens, etc.)

```
tempdata = zdata
tempdata = translate(tempdata,,
                    '152A2B2F141B1C260102030405060708090A0B0C0D1316171D20'x)
tempdata = translate(tempdata,'
                    '{ } [ ] ( ) # + - * / = < > & ^ | : % , ' )
```

EDIT Highlighting for Java, SQL, etc!

- Modified ISREDDE2 edit panel to support new HIGHLIGHT command

To use extended language highlighting, issue HILITE OTHER command then issue the HIGHLIGHT command with the following syntax:

```
HIGHLIGHT language | OFF
```

```
language = CARLA | FORTRAN | JAVA | PYTHON | RUBY | SHELL | SQL
```

OFF turns off extended language highlighting.

HIGHLIGHT BRACE toggles brace highlighting on and off.

HIGHLIGHT BRACKET toggles bracket highlighting on and off.

HIGHLIGHT DISPLAY | DISP shows current state of HIGHLIGHT options.

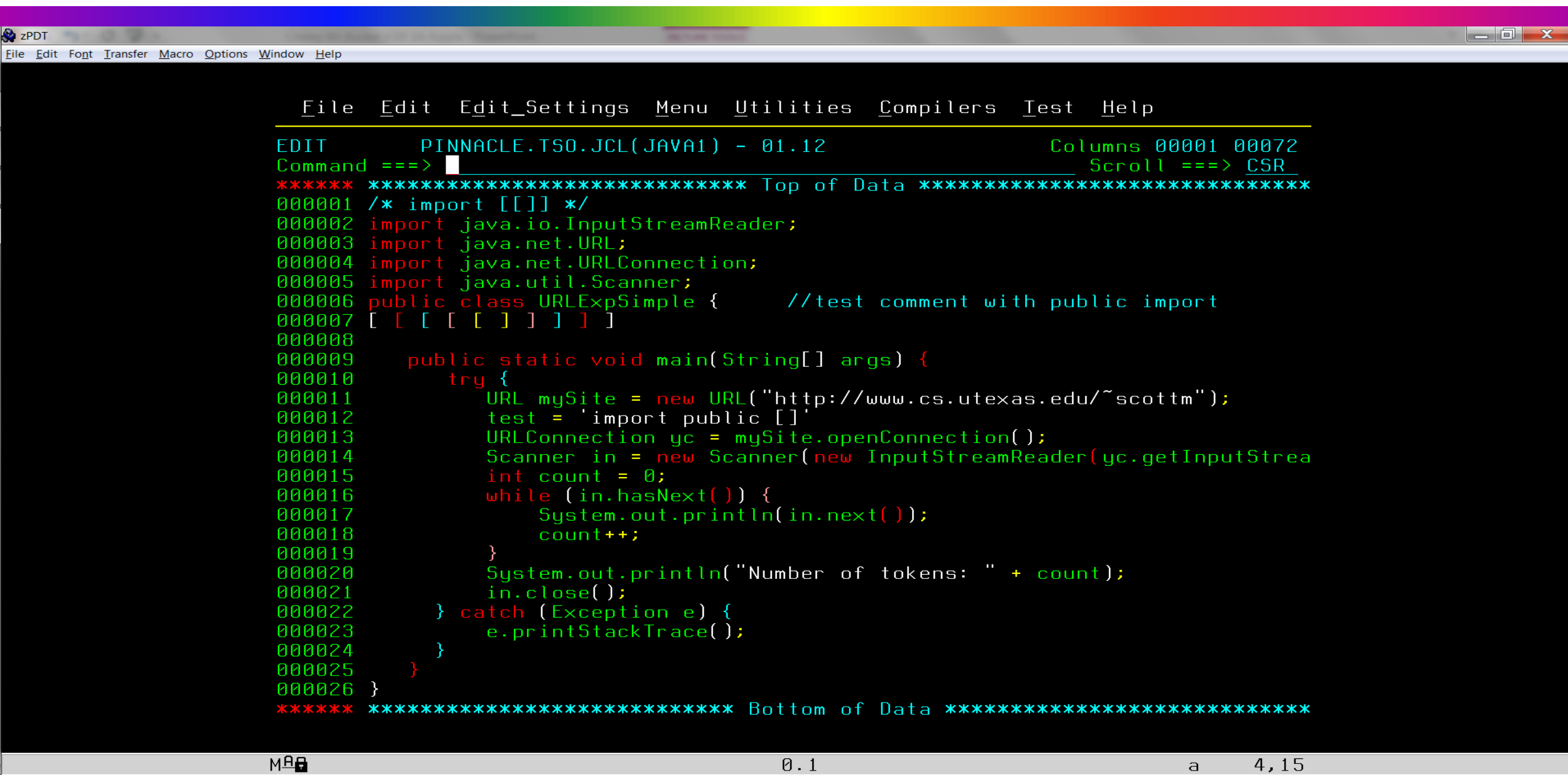
HIGHLIGHT HELP | ? displays this HELP text.

Note: NULLS ON ALL causes some keywords to remain unhighlighted.

NULLS ON STD allows all keywords to be highlighted.

Issue NULLS ON STD if not seeing all keywords highlighted.

HIGHLITE JAVA, BRACKET, and BRACE



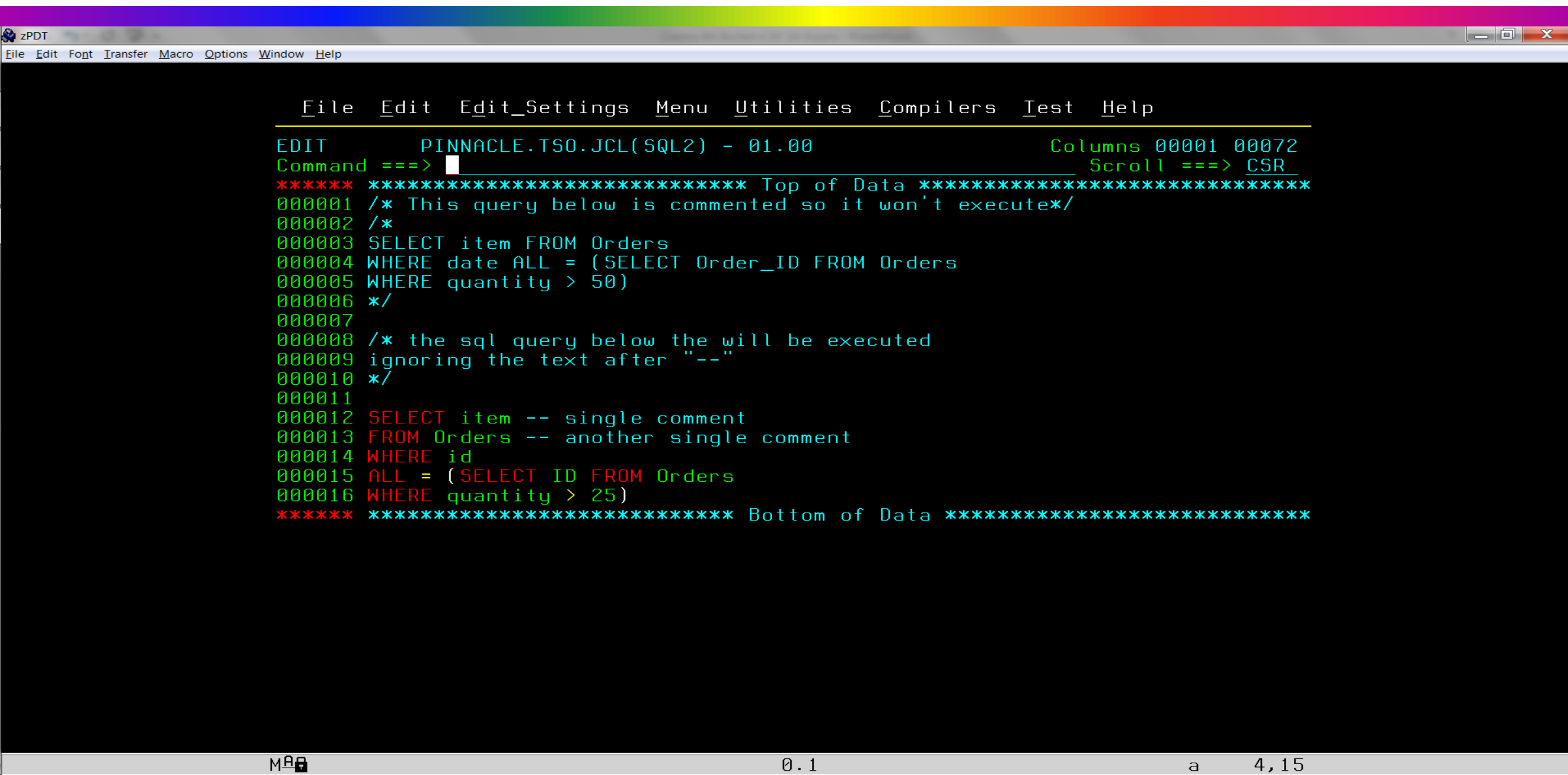
The screenshot shows the zPDT editor window with a menu bar (File, Edit, Font, Transfer, Macro, Options, Window, Help) and a toolbar. The editor displays a Java file named PINNACLE.TSO.JCL(JAVA1) - 01.12. The code is syntax-highlighted, with brackets and braces highlighted in red. The code includes imports for java.io.InputStreamReader, java.net.URL, java.net.URLConnection, and java.util.Scanner. It defines a public class URLExpSimple with a main method that uses a Scanner to read input from a URL and counts the number of tokens. The code is enclosed in a try-catch block to handle exceptions. The editor also shows a status bar at the bottom with the text "MBA 0.1 a 4,15".

```
EDIT      PINNACLE.TSO.JCL(JAVA1) - 01.12      Columns 00001 00072
Command ==>       Scroll ==> CSR

***** Top of Data *****
000001  /* import [[]] */
000002  import java.io.InputStreamReader;
000003  import java.net.URL;
000004  import java.net.URLConnection;
000005  import java.util.Scanner;
000006  public class URLExpSimple {      //test comment with public import
000007  [ [ [ [ [ ] ] ] ] ]
000008
000009      public static void main(String[] args) {
000010          try {
000011              URL mySite = new URL("http://www.cs.utexas.edu/~scottm");
000012              test = 'import public []'
000013              URLConnection yc = mySite.openConnection();
000014              Scanner in = new Scanner(new InputStreamReader(yc.getInputStream()));
000015              int count = 0;
000016              while (in.hasNext()) {
000017                  System.out.println(in.next());
000018                  count++;
000019              }
000020              System.out.println("Number of tokens: " + count);
000021              in.close();
000022          } catch (Exception e) {
000023              e.printStackTrace();
000024          }
000025      }
000026  }
***** Bottom of Data *****
```

MBA 0.1 a 4,15

HIGHLITE SQL



The screenshot shows a terminal window titled 'zPDT' with a rainbow-colored title bar. The menu bar includes 'File', 'Edit', 'Font', 'Transfer', 'Macro', 'Options', 'Window', and 'Help'. Below the menu bar, there is a secondary menu with 'File', 'Edit', 'Edit_Settings', 'Menu', 'Utilities', 'Compilers', 'Test', and 'Help'. The main text area displays a SQL editor interface for 'PINNACLE.TSO.JCL(SQL2) - 01.00'. The status bar at the bottom shows 'MRA', '0.1', 'a', and '4,15'. The SQL code is syntax-highlighted: keywords like 'SELECT', 'FROM', 'WHERE', and 'ALL' are in red; identifiers like 'item', 'id', 'ID', and 'quantity' are in green; and string literals like '/*' and '--' are in cyan. The code includes a comment about a query being commented out and another about a query being executed while ignoring text after '--'.

```
EDIT          PINNACLE.TSO.JCL(SQL2) - 01.00          Columns 00001 00072
Command ==>                                Scroll ==> CSR
***** Top of Data *****
000001 /* This query below is commented so it won't execute*/
000002 /*
000003 SELECT item FROM Orders
000004 WHERE date ALL = (SELECT Order_ID FROM Orders
000005 WHERE quantity > 50)
000006 */
000007
000008 /* the sql query below the will be executed
000009 ignoring the text after "--"
000010 */
000011
000012 SELECT item -- single comment
000013 FROM Orders -- another single comment
000014 WHERE id
000015 ALL = (SELECT ID FROM Orders
000016 WHERE quantity > 25)
***** Bottom of Data *****
```

EDIT Highlighting for Other Languages



- EDIT highlighting for other languages is now easily possible
- USRHILIT exec is easy to modify to add languages
- In addition to RFE languages, Ruby and Python also added to V1R2
- Lua, Swift, JavaScript are in plan to be added shortly
- Perl has over 1000 keywords, so any volunteers?

EDIT Highlighting for Other Languages - Modify USRHILIT

- USRHILIT modifications to add languages

- Modify kw.0 variable for number of keywords

```
when (usrhilng = 'CARLA') then  
do
```

```
    kw.0      = 46
```

- Add array blank-delimited keywords

```
    kw.1      = ' ALLOCATE '
```

```
    kw.2      = ' BDAMQSAM '
```

- Add array for default attribute string (what HILITE OTHER gives you)

```
    atr.1     = 'DDDDDDDDDD'
```

```
    atr.2     = 'DDDDDDDDDD'
```

- Add array for color attribute string (color for corresponding keyword)

```
    clr.1     = 'RRRRRRRRRR'
```

```
    clr.2     = 'RRRRRRRRRR'
```

EDIT Highlighting for Other Languages - Modify USRHILIT

- USRHILIT modifications to add languages (cont'd)
 - Add code to process any language-specific comments
 - This code processes '//' comments for Java

```
compos = pos('//',linedata)
if compos > 0 then
  do
    compend = compos + 2
    parse var shaddata =(compos) comshad =(compend)
    if comshad <> 'QQ' & comshad <> 'CC' then
      zshadow = overlay(,
        copies('C',zwidth - compos),,
        zshadow,,
        totchar+compos,zwidth - compos)
    end
```

Prepend USS path for COMPARE, COPY, CREATE, REPLACE

- Modified ISREDDE2 edit panel to prepend path
- No longer necessary to type full USS pathname for above commands

```
parse upper var zcmd zcmd1u zcmd2u
parse var zcmd zcmd1 zcmd2
if ((zcmd1u = 'COPY'      |,
    zcmd1u = 'COMPARE'   |,
    zcmd1u = 'COMP'      |,
    zcmd1u = 'CREATE'    |,
    zcmd1u = 'CRE'       |,
    zcmd1u = 'REPLACE'   |,
    zcmd1u = 'REPL')    &,
    (zpthnm <> ' '        &,
    substr(zcmd2,1,1) <> '/'))) then
    zcmd = zcmd1 zpthnm || '/' || zcmd2
```


Prepend USS path for COMPARE, COPY, CREATE, REPLACE

```
zPDT
File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      /S0W1/etc/inetd.conf      Columns 00001 00072
Command ==> create inetd1.conf      Scroll ==> CSR
***** Top of Data *****
c99991 ###
000002 # Internet server configuration database
000003 #
000004 # (C) COPYRIGHT International Business Machines Corp. 1985, 2001
000005 # All Rights Reserved
000006 # Licensed Materials - Property of IBM
000007 #
000008 # US Government Users Restricted Rights - Use, duplication or
000009 # disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
000010 #
000011 # /etc/inetd.conf
000012 #
000013 #           Internet server configuration database
000014 #
000015 # $01=PYQ0049, HOT7705, 010130, PDJP: Correct paths and remove
000016 #           unsupported services (FIN APAR 0W45915)
000017 #
000018 # Services can be added and deleted by deleting or inserting a
000019 # comment character (ie. #) at the beginning of a line
000020 #
000021 #=====
000022 # service | socket | protocol | wait/ | user | server | server program
000023 # name    | type  |         | nowait|      | program | arguments
000024 #=====
000025 #
000026 otelnet  stream tcp nowait OMVSKERN /usr/sbin/otelnetd otelnetd
000027 #shell   stream tcp nowait OMVSKERN /usr/sbin/orshd orshd -LV
```

MA 0.2 a 6,7

Prepend USS path for COMPARE, COPY, CREATE, REPLACE

```
zPDT
File Edit Font Transfer Macro Options Window Help

File Edit Edit_Settings Menu Utilities Compilers Test Help

EDIT      /S0W1/etc/inetd.conf      File created
Command ==>                               Scroll ==> CSR
***** Top of Data *****
000001 ###
000002 # Internet server configuration database
000003 #
000004 # (C) COPYRIGHT International Business Machines Corp. 1985, 2001
000005 # All Rights Reserved
000006 # Licensed Materials - Property of IBM
000007 #
000008 # US Government Users Restricted Rights - Use, duplication or
000009 # disclosure restricted by GSA ADP Schedule Contract with IBM Corp.
000010 #
000011 # /etc/inetd.conf
000012 #
000013 #           Internet server configuration database
000014 #
000015 # $01=PYQ0049, HOT7705, 010130, PDJP: Correct paths and remove
000016 #           unsupported services (FIN APAR 0W45915)
000017 #
000018 # Services can be added and deleted by deleting or inserting a
000019 # comment character (ie. #) at the beginning of a line
000020 #
000021 #=====
000022 # service | socket | protocol | wait/ | user | server | server program
000023 # name    | type  |         | nowait|      | program | arguments
000024 #=====
000025 #
000026 otelnet  stream tcp nowait OMVSKERN /usr/sbin/otelnetd otelnetd
000027 #shell   stream tcp nowait OMVSKERN /usr/sbin/orshd orshd -LV
```

MA 0.2 6,9

Prepend USS path for COMPARE, COPY, CREATE, REPLACE

```
zPDT
File Edit Font Transfer Macro Options Window Help

Menu Utilities View Options Help

z/OS UNIX Directory List Row 1 to 23 of 47
Command ==> Scroll ==> CSR

Pathname . : /S0W1/etc
EUID . . : 0
Command Filename Message Type Permission Audit Ext Fmat
-----
. Dir rwxr-xr-x fff--- ----
.. Dir rwxr-xr-x fff--- ----
csh.cshrc File rw-r--r-- fff--- --s- nl
csh.login File rw-r--r-- fff--- --s- nl
dfs Dir rwxr-xr-x fff--- ----
hosts File rwxr-xr-x fff--- --s- nl
httpd.conf File rwX----- fff--- --s- nl
httpd.envvars File rw----- fff--- --s- nl
ics_pics.conf File rw----- fff--- --s- nl
inetd.conf File ----- fff--- --s- nl
inetd1.conf File ----- fff--- --s- nl
init.options File ----- fff--- --s- nl
ioepdcf Syml rwxrwxrwx fff---
javelin.conf File rw----- fff--- --s- nl
jazz604 Dir rwxrwxrwx fff--- ----
ldap Dir rwxr-xr-x fff--- ----
lgw_fcgi.conf File rw----- fff--- --s- nl
log File rw-r--r-- fff--- --s- nl
magic File rw-r--r-- fff--- --s- nl
mailx.rc File rwxr-xr-x fff--- --s- nl
mvsds.conf File rw----- fff--- --s- nl
osnmpd.data File rwxrwxrwx fff--- --s- nl
pagent.conf File rwxr-xr-x fff--- --s- nl
```

MA 0.2 a 4, 15

PDSEGEN



- Lionel Dyck's PDSEGEN another good example of user-driven code
- ISPF unlikely to duplicate function available in PDSEGEN
- If you want to use PDSE Member Generations, you need PDSEGEN
- PDSEGEN surfaced numerous PDSE Member Generation bugs
- You can download PDSEGEN [here](#)
- Other products that support PDSE Member Generations
 - CA-PDSMAN
 - Compuware FileAid
 - IBM Dataset Commander
 - MacKinney SimpList

Acknowledgements (Knowing and Unknowing)



- The ISPF Cabal
 - Lionel Dyck, 21st Century
 - Sam Golob
 - John Kalinich
 - Bruce Koss, Wells Fargo
 - Ray Mullins, Trident Services
 - William Smith, Trident Services
- Marv Knight, IBM
- Quyen Pham, IBM
- Tom Reed, IBM
- Sam Reynolds, IBM
- Pedro Vera
- Ed Webb, SAS