

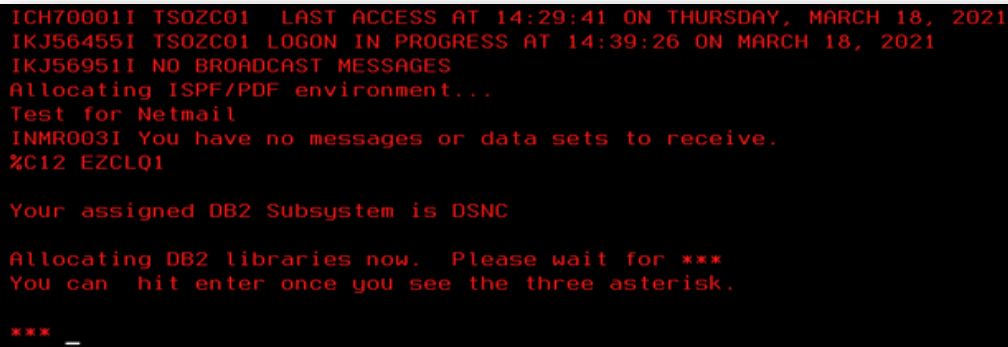
# COBOL Basics Lab 2

## GOALS:

- Sign on to the mainframe.
- Navigate the ISPF Primary Option Menu to find HELLO2.
- Add more greetings on the lines following 'HELLO WORLD', save the changes.
- Navigate to JCL member HELLO2 and submit the JCL to the system.
- Note whether or not the return code is zero or not, then navigate out and sign off.

## Step-by-step:

1. Use the **Course Lab Kit** only if you have forgotten your **ID** and **PASSWORD**. *(If you wrote your ID and PASSWORD and kept it in a safe place, you can log on to a mainframe session.)*

A screenshot of a mainframe terminal window with a black background and red text. The text shows a user logging on, receiving system messages about broadcast messages and netmail, and being prompted to wait for DB2 libraries. At the bottom, three asterisks are displayed, followed by a horizontal line, indicating a prompt for the user to press the ENTER key.

```
ICH70001I TSOZC01  LAST ACCESS AT 14:29:41 ON THURSDAY, MARCH 18, 2021
IKJ56455I TSOZC01  LOGON IN PROGRESS AT 14:39:26 ON MARCH 18, 2021
IKJ56951I NO BROADCAST MESSAGES
Allocating ISPF/PDF environment...
Test for Netmail
INMR003I You have no messages or data sets to receive.
%C12 EZCLQ1

Your assigned DB2 Subsystem is DSNC

Allocating DB2 libraries now.  Please wait for ***
You can hit enter once you see the three asterisk.

*** _
```

2. The 3 asterisks at the bottom are a signal to press the **ENTER** key to continue.

The next screen, called the **ISPF Primary Option Menu** looks something like this:

```
Menu  Utilities  Compilers  Options  Status  Help
-----
ISPF Primary Option Menu
Option ==> _

0 Settings      Terminal and user parameters
1 View          Display source data or listings
2 Edit          Create or change source data
3 Utilities     Perform utility functions
4 Foreground    Interactive language processing
5 Batch         Submit job for language processing
6 Command       Enter TSO or Workstation commands
D Db2           Db2 Menus
E ITS MENU      ITS extended menu
S SDSF          System Display and Search Facility
```

3. The cursor is near the top, to the right of the work **Option**.
4. To retrieve your COBOL program, you need to type **3.4** and press **ENTER**.

This will take you to the **Data Set List Utility**. Your **ID** is shown in the middle, to the right of the words **Dsname Level**.

```
Option ==> _                               Data Set List Utility
More:
blank Display data set list                P Print data set list
V Display VTOC information                 PV Print VTOC information

Enter one or both of the parameters below:
Dsname Level . . . TS0ZC01
Volume serial . . .
```

5. Now press the **ENTER** key, and you will see a list of all your data sets (*also known as files*).

```
Menu  Options  View  Utilities  Compilers  Help
-----
DSLIST - Data Sets Matching TS0ZC01
Command ==> _

Command - Enter "/" to select action
-----
E TS0ZC01
  TS0ZC01.COBOL.LABS
  TS0ZC01.DATA
  TS0ZC01.EXEC
  TS0ZC01.ISPF.PROFILE
  TS0ZC01.JCL.CNTL
  TS0ZC01.SPUFI.IN
  TS0ZC01.SQLOUT
  TS0ZC01.TSOLLOG.DATA
```

The list of datasets reveals one by the name of **TSOZC01.COBOL.LABS**. The first part of the name (TSOZC01) is likely to be different, as each student will have a unique ID. Don't worry about this!

6. Place your cursor to the left of the **TSOZC01.COBOL.LABS** dataset, and type **E**.
7. Then press the **ENTER** key. This will take you to a list of COBOL programs!

```
EDIT                                TSOZC01.COBOL.LABS
Command ==>
      Name      Prompt      Size
____ COB01
____ COB10
____ COB20
____ HELLO1      20
____ E HELLO2      36
      **End**
```

8. Place your cursor to the left of the **HELLO2** program (this is also known as the “HELLO2 member”) and type **E**.
9. Then press the **ENTER** key. This will take you to the COBOL program!

```
EDIT      TSOZC01.COBOL.LABS(HELLO2) - 01.01
Command ==>
***** ***** Top of Data
000100  IDENTIFICATION DIVISION.
000200  PROGRAM-ID. HELLO2.
000300  ENVIRONMENT DIVISION.
000400  *****
000500  * THIS PROGRAM DISPLAYS A 'HELLO WORLD'
000600  *   SHOW UP IN THE SYSYOUT OF THE JOB OUT
000700  *****
000800
000900  *CONFIGURATION SECTION.
001000  *SPECIAL-NAMES.  SYSIN IS SYSIN.
001100  INPUT-OUTPUT SECTION.
001200
001300  DATA DIVISION.
001400
001500  FILE SECTION.
001600
001700  WORKING-STORAGE SECTION.
```

Welcome to the mainframe editor! The editor allows you to scroll down by pressing the **F8** key and to scroll up by pressing the **F7** key. *(More information at the bottom of the screen.)*

10. When you scroll down by pressing the **F8** key once, this is what you will see:

```
EDIT          TSOZC01.COBOL.LABS(HELL02) - 01.01           Columns 00
Command ==> _____ Scroll
001800
001900    01   WORK-FIELDS.
002000
002100        05   HELLO-WORLD-SW                PIC X(1)      VALUE 'Y'.
002200
002300    PROCEDURE DIVISION.
002400
002500 ** CODE UP SOME DISPLAY STATEMENTS WITH LOTS OF '*' TO SAY
002600 ** HELLO WORLD IN THE OUTPUT
002700 ** DISPLAY STATEMENTS MUST HAVE THE SINGLE QUOTES AROUND THE
002800
002900         DISPLAY 'HELLO WORLD!'
003000         DISPLAY '
003100         DISPLAY '
003200         DISPLAY '
003300         DISPLAY '?????????????????????????????????????????????'
003400         DISPLAY '?????????????????????????????????????????????'
003500
```

This program has room for you to place some of your own words. So, move your cursor down to where you see empty spaces next to **DISPLAY** and type in what you wish. Be careful not to remove the single quotes that are in the **B margin** (on the left and right of where words can be typed in).

Here's an example of what one person might do:

```

EDIT          TSOZC01.COBOL.LABS(HELLO2) - 01.01          Columns 00
Command ===> _____ Scroll _____
001900  01  WORK-FIELDS.
002000
002100          05  HELLO-WORLD-SW          PIC X(1)          VALUE 'Y'.
002200
002300  PROCEDURE DIVISION.
002400
002500  ** CODE UP SOME DISPLAY STATEMENTS OF YOUR OWN
002700  ** DISPLAY STATEMENTS MUST HAVE THE SINGLE QUOTES AROUND THEM
002800
002900          DISPLAY 'HELLO WORLD!'
003000          DISPLAY 'I AM LEARNING COBOL - HURRAY!'
003100          DISPLAY 'MY FAVORITE SPORTS TEAM IS _____'
003200          DISPLAY 'HELLO EVERYONE!'
003300          DISPLAY '?????????????????????????????????????????'
003400          DISPLAY '?????????????????????????????????????????'
003500

```

CONGRATULATIONS! You have Signed on, navigated the ISPF Primary Option Menu to find HELLO2, and added more greetings on the lines following 'HELLO WORLD'. Now you need to save the changes, navigate to JCL member HELLO2 and submit the JCL to the system, noting whether or not the return code is zero, then navigate out and sign off.

11. Press the function key number 3 (F3). This will automatically save your changes, and take you out of the edit environment.

```
Menu  Functions  Confirm  Utilities  Help
EDIT                                     TSOZC01.COBOL.LABS      Member HELLO2 saved
Command ==> _____ Scroll ==> CSR
      Name      Prompt      Size  Created      Changed      ID
      HELLO2    *Edited      35   2021/02/05   2021/03/18 16:34:43  TSOZC01
      **End**
```

12. Notice the message in the upper right corner that confirms the save!
13. Now, to navigate to JCL, press **F3** again, and you will see the list of datasets.

```
Menu  Options  View  Utilities  Con
DSLIST - Data Sets Matching TSOZC01
Command ==> _____
Command - Enter "/" to select action
-----
      TSOZC01
      TSOZC01.COBOL.LABS
      TSOZC01.DATA
      TSOZC01.EXEC
      TSOZC01.ISPF.PROFILE
      TSOZC01.JCL.CNTL
      TSOZC01.SPUFI.IN
E
```

14. Place the cursor to the left of the **JCL.CNTL** dataset and type **E**.

15. Press **ENTER** and you will see a list of JCL members. Open **LAB2** by placing an **E** next to it and then pressing **ENTER**.

```
Menu Functions Confirm Utilities
EDIT TSOZC01.JCL.CNTL
Command ==>
Name Prompt Size
JOB CARD 9
E LAB2 10
LAB3 10
```

16. This has JCL statements. Place **SUB** on the command line, and press **ENTER**!

```
File Edit Edit_Settings Menu Utilities Compilers
EDIT TSOZC01.JCL.CNTL(LAB2) - 01.02
Command ==> SUB
***** Top of Data *****
000100 //TSOZC012 JOB 30000000,'TSOZC01',MSGLEVEL=(1,1),
000200 // CLASS=A,MSGCLASS=Q,NOTIFY=&SYSUID,REGION=0M
000300 //*****
000400 //*
000500 //*****
000600 //COMPILE EXEC IGYWCL,PARM=(OFFSET,NOLIST,ADV),
000800 // PGMLIB='&&GOSET',GOPGM=HELLO2
000900 //COBOL.SYSIN DD DSN=TSOZC01.COBOL.LABS(HELLO2),
001000 //COBOL.SYSLIB DD DUMMY
001100 //*
```

17. Next is a message on the screen, with your JOB name (**TSOZC012**) and your JOB number (**JOB01646**).

18. When you press **ENTER**, you will get another message:

```
File Edit View Communication Actions Window Help
IKJ56250I JOB TSOZC012(JOB01646) SUBMITTED
***
```

This message tells us if the job has run successfully or not. In this case, it is successful. How do we know? MAXCC=0000 means there were no errors. If you do not get all zeroes, you will need to look carefully at the program and the JCL to see if you can find the error. You may need a friend to help you.

```
19.32.51 JOB01646 $HASP165 TSOZC012 ENDED AT MVSCZ11 MAXCC=0000 CN(INTERNAL)
***
```

19. Press **ENTER**, you are back in an **EDIT** session:

```
EDIT          TSOZC01.JCL.CNTL(LAB2)
Command ==> =X
*****
000100 //TSOZC012 JOB 30000000, 'T
000200 //          CLASS=A,MSGCLASS=Q,M
```

20. Type **=X** and you will leave ISPF and enter TSO mode.

21. Type in **X** (or type the word **EXIT**).

22. Press **ENTER** and you will be logged off.

```
Session A - MVSCZ11 - [24 x 80]
File Edit View Communication Actions Window Help
TSOZC01.ISP01636.SPFL0G1.LIST has been deleted.
READY
X
```

Congratulations! You signed on to mainframe and found the HELLO2 program. You added more greetings on the lines, saved the changes, then navigated to JCL member HELLO2. You then submitted a JOB (carrying the JCL) to the system. Then you noted if the return codes are zeros (or not), then navigated out and sign off.

We are finished now!