

TEAMWARE SOLUTIONS

Mainframe Development Assignment – KSDS UPDATE ASSIGNMENT DOCUMENTATION

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Objective

The objective of this assignment is to update an existing KSDS (Key Sequenced Data Set) using update records stored in a PS (Physical Sequential) file.

The tasks are:

1. Read updated department records from a PS file.
2. For each employee ID, perform a RANDOM READ on the KSDS.
3. If record exists → update the department field and REWRITE the record.
4. If record does NOT exist → print a “Record Not Found” message.
5. Continue updating all records without stopping.

2. Files Used

2.1 Original PS File:

- Contains 9 employee IDs with departments. Used earlier to populate the KSDS with initial data.

```
TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

File Edit Edit Settings Menu Utilities Compilers Test Help

EDIT GAMA03.TEST.PS.FILE2 Columns 00001 00072
Command ==> Scroll ==> CSR
***** Top of Data *****
--MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
--MSG> ==> FIND P'.' to position cursor to these
000100 11 Girish 00020000 00001000
000200 12 America 00070000 00009000
000300 13 Andaman 00060000 00005000
000400 14 BlaBla 00050000 00004000
000500 15 Arpit 00040000 00003000
000600 16 fityanshu 00030000 00002000
***** Bottom of Data *****

F1=Help F2=Split F3=Exit F5=Rfind F6=Rchange F7=Up
F8=Down F9=Swap F10=Left F11=Right F12=Cancel
JCL ISFPCU41 UPDT FILEMGR *OLDDT -COBOL CPYBK

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2.2 KSDS File (Cluster)

GAMA03.EMPDEPT. KSDS.CLUSTER

- Indexed file.
- EMP-ID used as the record key.
- Currently contains 2 records (copied from PSFILE earlier).
- This file will be UPDATED by our program.

```
TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF
Process Options Help
Edit GAMA03.EMPDEPT.KSDS.CLUSTER Top of 9
Command ==> Scroll PAGE
Key EMP-ID FILLER EMP-NAME FILLER MONTHLY-SALAR
#2 #3 #4 #5 #6
AN 1:10 AN 11:1 AN 12:30 AN 42:1 ZD 43:8
<---+---> - <---+---1---+---2---+---> - <---+--->
***** *****
***** Top of data *****
000001 11 finance *****
000002 12 finance *****
000003 13 sales *****
000004 14 it *****
000005 15 it *****
000006 16 com *****
000007 17 com *****
000008 18 com *****
000009 19 com *****
***** End of data *****
*****

F1=Help F2=Zoom F3=Exit F4=CRetriev F5=RFind F6=RChange
F7=Up F8=Down F9=Swap F10=Left F11=Right F12=Cancel
JCL ISFPCU41 UPDT *FILEMGR OLDDT -COBOL CPYBK
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2.3 New Update PS File

GAMA03. TEST. EMPDEPT.UPDATE

- Contains 6 update records.
- 5 EMP-IDs match old PSFILE → must be updated in KSDS.
- 1 EMP-ID does NOT exist → must print “Record Not Found”.

```
TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT GAMA03.TEST.EMPDEPT.UPDATE Data set saved
Command ==> Scroll ==> CSR
***** Top of Data *****
--MSG> -CAUTION- Data contains invalid (non-display) characters. Use command
--MSG> ==> FIND P'.' to position cursor to these
--MSG> -Warning- The UNDO command is not available until you change
--MSG> your edit profile using the command RECOVERY ON.
000600 16 VSAM
000700 17 VSAM
000800 18 VSAM
000900 19 VSAM
001000 20 VSAM
***** Bottom of Data *****

F1=Help F2=Split F3=Exit F5=Rfind F6=Rchange F7=Up
F8=Down F9=Swap F10=Left F11=Right F12=Cancel
JCL ISFPCU41 *UPDT FILEMGR OLDDT -COBOL CPYBK

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3. Record Layouts

3.1 Updated PSFILE Copybook Structure (ASSGN):

```
TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
VIEW GAMA03.COPYLIB(ASSGN) - 01.00 Columns 00001 00072
Command ==> Scroll ==> CSR
***** Top of Data *****
000100 01 UPDATE-REC.
000200 05 UPD-EMP-ID PIC X(10).
000300 05 FILLER PIC X(01).
000400 05 UPD-DEPT PIC X(69). (80 - 11 = 69)
***** Bottom of Data *****

F1=Help F2=Split F3=Exit F5=Rfind F6=Rchange F7=Up
F8=Down F9=Swap F10=Left F11=Right F12=Cancel
JCL ISFPCU41 UPDT FILEMGR OLDDT -COBOL *CPYBK

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```

4. Program Logic (COBV01C):

```
TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF
File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          GAMA03.COBOL.SRCLIB(COBV01C) - 01.05          Columns 00001 00072
Command ==>          Scroll ==> CSR
000100      IDENTIFICATION DIVISION.
000200      PROGRAM-ID. COBV01C
000300      ENVIRONMENT DIVISION.
000400      INPUT-OUTPUT SECTION.
000500      FILE-CONTROL.
000600          SELECT UPD-FILE ASSIGN TO UPDFILE
000700              ORGANIZATION IS SEQUENTIAL
000800              ACCESS MODE IS SEQUENTIAL
000900              FILE STATUS IS WS-UPD-FS.
001000          SELECT IEMPFIL ASSIGN TO EMPINP
001100              ORGANIZATION IS INDEXED
001200              ACCESS MODE IS RANDOM
001300              RECORD KEY IS EMP-ID
001400              FILE STATUS IS WS-IEMP-FS.
001500      DATA DIVISION.
001600      FILE SECTION.
001700      FD UPD-FILE
001800          RECORD CONTAINS 80 CHARACTERS
001900          RECORDING MODE IS F.
002000      01 UPDATE-REC.
002100          05 UPD-EMP-ID          PIC X(10).
002200          05 FILLER              PIC X(01).
002300          05 UPD-DEPT            PIC X(69).
002400      FD IEMPFIL.
002500      COPY IEMPFIL.
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap      F10=Left      F11=Right      F12=Cancel
JCL          ISFPCU41 UPDT      FILEMGR      OLDDT      *COBOL      -CPYBK
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TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF
File Edit Edit_Settings Menu Utilities Compilers Test Help
-----
EDIT          GAMA03.COBOL.SRCLIB(COBV01C) - 01.05          Columns 00001 00072
Command ==>          Scroll ==> CSR
002500      COPY IEMPFIL.
002600      WORKING-STORAGE SECTION.
002700          01 WS-UPD-FS          PIC XX.
002800          01 WS-IEMP-FS          PIC XX.
002900          01 WS-EOF              PIC X VALUE 'N'.
003000          88 EOF-YES            VALUE 'Y'.
003100          88 EOF-NO              VALUE 'N'.
003200      PROCEDURE DIVISION.
003300      MAIN-PARA.
003400          OPEN INPUT UPD-FILE
003500          OPEN I-O IEMPFIL
003600          PERFORM UNTIL EOF-YES
003700              READ UPD-FILE
003800              AT END
003900                  SET EOF-YES TO TRUE
004000              NOT AT END
004100                  PERFORM PROCESS-UPDATE
004200          END-READ
004300          END-PERFORM
004400          CLOSE UPD-FILE
004500          CLOSE IEMPFIL
004600          GOBACK.
004700      PROCESS-UPDATE.
004800          MOVE UPD-EMP-ID TO EMP-ID
004900          READ IEMPFIL KEY IS EMP-ID
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap      F10=Left      F11=Right      F12=Cancel
JCL          ISFPCU41 UPDT      FILEMGR      OLDDT      *COBOL      -CPYBK
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TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

File Edit Edit Settings Menu Utilities Compilers Test Help
-----
EDIT          GAMA03.COBOL.SRCLIB(COBV01C) - 01.05          Columns 00001 00072
Command ==>      Scroll ==> CSR
005000          INVALID KEY
005100          DISPLAY 'RECORD NOT FOUND FOR EMP-ID = ' EMP-ID
005200          NOT INVALID KEY
005300          MOVE UPD-DEPT TO EMP-NAME
005400          REWRITE IEMP-REC
005500          INVALID KEY
005600          DISPLAY 'ERROR UPDATING EMP-ID = ' EMP-ID
005700          NOT INVALID KEY
005800          DISPLAY 'UPDATED EMP-ID = ' EMP-ID
005900          END-REWRITE
006000          END-READ.
***** Bottom of Data *****

F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap       F10=Left     F11=Right     F12=Cancel
-JCL         ISFPCU41 UPDT   FILEMGR     OLDDT        *COBOL       CPYBK

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6. JCL (Compile + Run)

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TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

File Edit Edit Settings Menu Utilities Compilers Test Help
-----
EDIT          GAMA03.JOBLIB(COBCOMP) - 01.13          Columns 00001 00072
Command ==>      Scroll ==> CSR
***** Top of Data *****
000100 //GAMA03D JOB MSGLEVEL=(1,1),NOTIFY=&SYSUID,COND=(4,LT)
000200 //MYPROC JCLLIB ORDER=(MATE1.PROCLIB)
000300 /*
000400 /* -----
000500 /* COMPILE COBOL PROGRAM
000600 /* -----
000700 //CL      EXEC COBOLCL,
000800 //          COPYLIB=GAMA03.COPYLIB,
000900 //          LOADLIB=GAMA03.LOADLIB,
001000 //          SRCLIB=GAMA03.COBOL.SRCLIB,
001100 //          MEMBER=COBV01C
001200 /*
001300 /* -----
001400 /* RUN COBOL PROGRAM
001500 /* -----
001600 //STEP02 EXEC PGM=COBV01C
001700 //STEPLIB DD DSN=GAMA03.LOADLIB,DISP=SHR
001800 //SYSOUT DD SYSOUT=*
001900 /* UPDATE INPUT FILE (PS FILE)
002000 //UPDFILE DD DSN=GAMA03.TEST.EMPDEPT.UPDATE,DISP=SHR
002100 /* KSDS FILE TO BE UPDATED
002200 //EMPINP DD DSN=GAMA03.EMPDEPT.KSDS.CLUSTER,DISP=SHR
002300 /*
***** Bottom of Data *****
F1=Help      F2=Split      F3=Exit      F5=Rfind      F6=Rchange      F7=Up
F8=Down      F9=Swap       F10=Left     F11=Right     F12=Cancel
*JCL         ISFPCU41 UPDT   FILEMGR     OLDDT        COBOL       -CPYBK

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7. Expected Output:


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TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

Display Filter View Print Options Search Help
-----
SDSF OUTPUT DISPLAY GAMA03D JOB00239 DSID 103 LINE 0 COLUMNS 02- 81
COMMAND INPUT ==> SCROLL ==> CSR
***** TOP OF DATA *****
UPDATED EMP-ID = 16
UPDATED EMP-ID = 17
UPDATED EMP-ID = 18
UPDATED EMP-ID = 19
RECORD NOT FOUND FOR EMP-ID = 20
***** BOTTOM OF DATA *****

F1=HELP      F2=SPLIT      F3=END      F4=RETURN      F5=IFIND      F6=BOOK
F7=UP        F8=DOWN      F9=SWAP     F10=LEFT      F11=RIGHT     F12=RETRIEVE
-JCL        *ISFPCU4 UPDT  FILEMGR  OLDDT      COBOL      CPYBK

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8. Updated CLUSTER file:

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TSO
File Edit View Tools Help
Clear Erase PA1 PA2 PA3 EraseF

Process Options Help
-----
Edit GAMA03.EMPDEPT.KSDS.CLUSTER
Command ==>
Key EMP-ID FILLER + Type KSDS RBA FILLER MONTHLY-SALAR
#2 #3 #4 #5 #6
AN 1:10 AN 11:1 AN 12:30 AN 42:1 ZD 43:8
<---+---> - <---+---1---+---2---+---> - <---+--->
***** Top of data *****
000001 11 finance *****
000002 12 finance *****
000003 13 sales *****
000004 14 it *****
000005 15 it *****
000006 16 VSAM *****
000007 17 VSAM *****
000008 18 VSAM *****
000009 19 VSAM *****
***** End of data *****

F1=Help      F2=Zoom      F3=Exit      F4=CRetrieve  F5=RFind      F6=RChange
F7=Up        F8=Down      F9=Swap     F10=Left     F11=Right     F12=Cancel
-JCL        ISFPCU41 UPDT  *FILEMGR  OLDDT      COBOL      CPYBK

Online 4,15

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