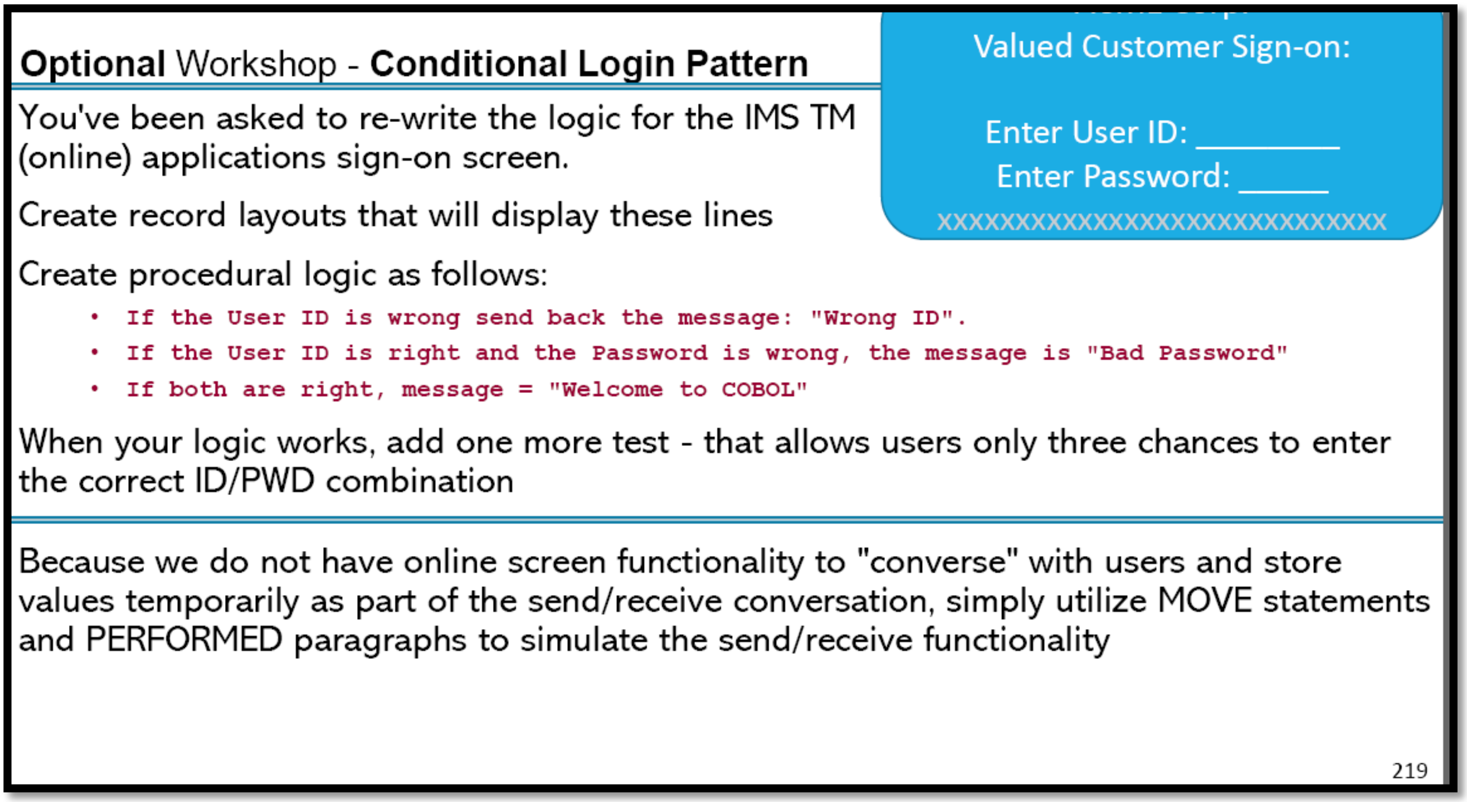
Question?



Optional Workshop - **Conditional Login Pattern**

You've been asked to re-write the logic for the IMS TM (online) applications sign-on screen.

Create record layouts that will display these lines

Create procedural logic as follows:

- If the User ID is wrong send back the message: "Wrong ID".
- If the User ID is right and the Password is wrong, the message is "Bad Password"
- If both are right, message = "Welcome to COBOL"

When your logic works, add one more test - that allows users only three chances to enter the correct ID/PWD combination

Because we do not have online screen functionality to "converse" with users and store values temporarily as part of the send/receive conversation, simply utilize MOVE statements and PERFORMED paragraphs to simulate the send/receive functionality

Valued Customer Sign-on:

Enter User ID: ________

Enter Password: _____

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

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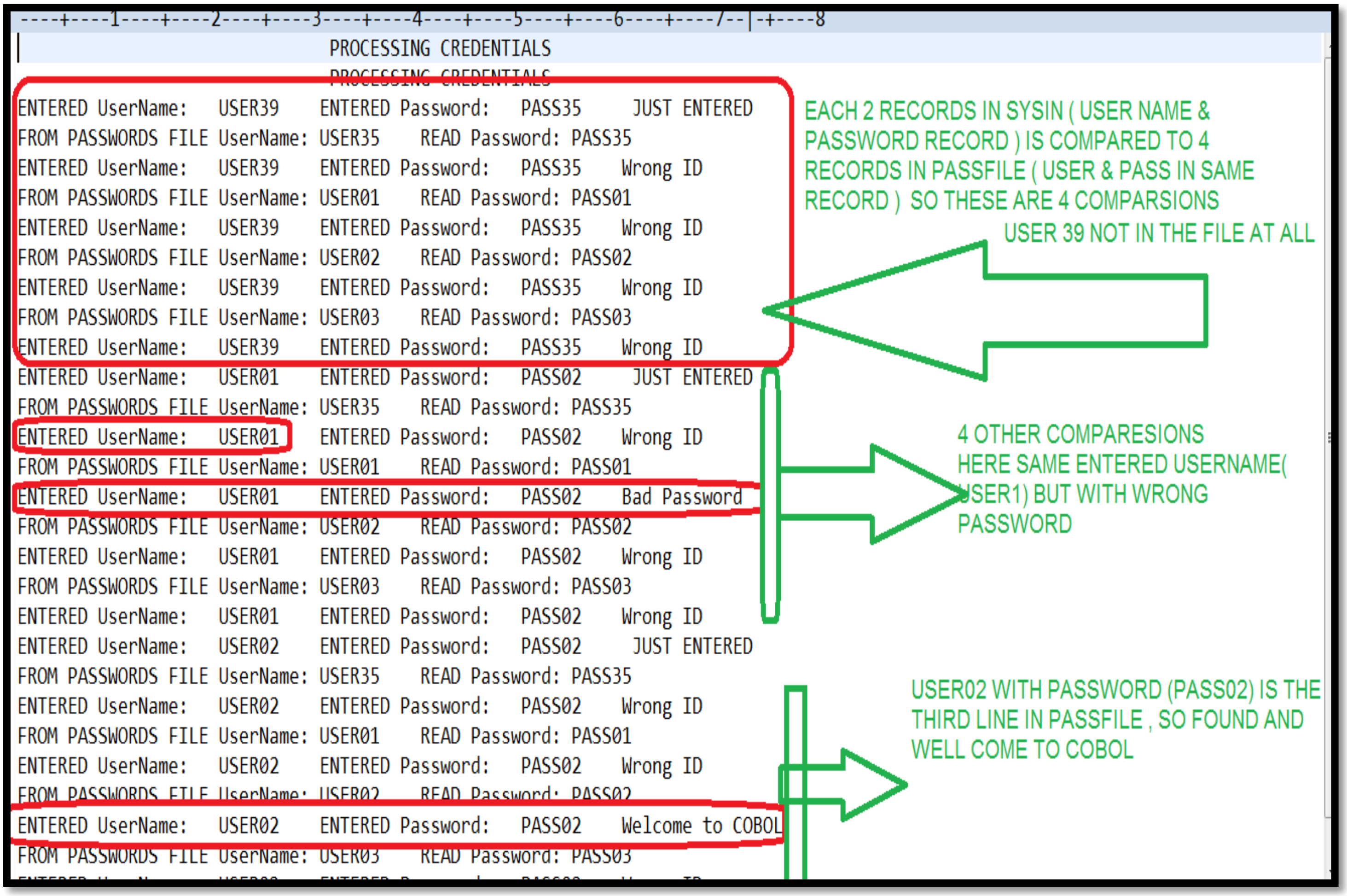
Answer :



```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7--|-+----8
                              PROCESSING CREDENTIALS
                              PROCESSING CREDENTIALS
ENTERED UserName:   USER39    ENTERED Password:   PASS35     JUST ENTERED
FROM PASSWORDS FILE UserName: USER35    READ Password: PASS35
ENTERED UserName:   USER39    ENTERED Password:   PASS35    Wrong ID
FROM PASSWORDS FILE UserName: USER01    READ Password: PASS01
ENTERED UserName:   USER39    ENTERED Password:   PASS35    Wrong ID
FROM PASSWORDS FILE UserName: USER02    READ Password: PASS02
ENTERED UserName:   USER39    ENTERED Password:   PASS35    Wrong ID
FROM PASSWORDS FILE UserName: USER03    READ Password: PASS03
ENTERED UserName:   USER39    ENTERED Password:   PASS35    Wrong ID
ENTERED UserName:   USER01    ENTERED Password:   PASS02     JUST ENTERED
FROM PASSWORDS FILE UserName: USER35    READ Password: PASS35
ENTERED UserName:   USER01    ENTERED Password:   PASS02    Wrong ID
FROM PASSWORDS FILE UserName: USER01    READ Password: PASS01
ENTERED UserName:   USER01    ENTERED Password:   PASS02    Bad Password
FROM PASSWORDS FILE UserName: USER02    READ Password: PASS02
ENTERED UserName:   USER01    ENTERED Password:   PASS02    Wrong ID
FROM PASSWORDS FILE UserName: USER03    READ Password: PASS03
ENTERED UserName:   USER01    ENTERED Password:   PASS02    Wrong ID
ENTERED UserName:   USER02    ENTERED Password:   PASS02     JUST ENTERED
FROM PASSWORDS FILE UserName: USER35    READ Password: PASS35
ENTERED UserName:   USER02    ENTERED Password:   PASS02    Wrong ID
FROM PASSWORDS FILE UserName: USER01    READ Password: PASS01
ENTERED UserName:   USER02    ENTERED Password:   PASS02    Wrong ID
FROM PASSWORDS FILE UserName: USER02    READ Password: PASS02
ENTERED UserName:   USER02    ENTERED Password:   PASS02    Welcome to COBOL
FROM PASSWORDS FILE UserName: USER03    READ Password: PASS03
ENTERED UserName:   USER02    ENTERED Password:   PASS02    Wrong ID
```

EACH 2 RECORDS IN SYSIN (USER NAME & PASSWORD RECORD) IS COMPARED TO 4 RECORDS IN PASSFILE (USER & PASS IN SAME RECORD) SO THESE ARE 4 COMPARSIONS

USER 39 NOT IN THE FILE AT ALL

4 OTHER COMPARESIONS HERE SAME ENTERED USERNAME(USER1) BUT WITH WRONG PASSWORD

USER02 WITH PASSWORD (PASS02) IS THE THIRD LINE IN PASSFILE , SO FOUND AND WELL COME TO COBOL

```
//USER35G JOB ,
// MSGCLASS=H,MSGLEVEL=(1,1),TIME=(,4),REGION=144M,COND=(16,LT)
//*
// SET COBPGM='USERPASS'
//**** Compile JCL ******
//STP0000 EXEC PROC=ELAXFCOC,
// CICS=,
// DB2=,
// COMP=
//COBOL.SYSPRINT DD SYSOUT=*
//SYSLIN DD DISP=SHR,
//        DSN=&SYSUID..COBOBJS.OBJ(&COBPGM.)
//COBOL.SYSLIB DD DISP=SHR,
//        DSN=&SYSUID..COBOL.COPYLIB
//COBOL.SYSXMLSD DD DUMMY
//COBOL.SYSIN DD DISP=SHR,
//        DSN=&SYSUID..LEARN.COBOL(&COBPGM.)
//****Link/Edit Step ******
//LKED EXEC PROC=ELAXFLNK
//LINK.SYSLIB DD DSN=CEE.SCEELKED,
//        DISP=SHR
//        DD DSN=&SYSUID..LEARN.LOAD,
//        DISP=SHR
//LINK.OBJ0000 DD DISP=SHR,
//        DSN=&SYSUID..COBOBJS.OBJ(&COBPGM.)
//LINK.SYSLIN DD *
     INCLUDE OBJ0000
/*
//LINK.SYSLMOD   DD  DISP=SHR,
//        DSN=&SYSUID..LEARN.LOAD(&COBPGM.)
//*
//** Go (Run) Step. Add //DD cards when needed ******
//GO    EXEC   PROC=ELAXFGO,GO=&COBPGM.,
//        LOADDSN=&SYSUID..LEARN.LOAD
//SYSIN   DD DISP=SHR,
//        DSN=&SYSUID..LEARN.SYSIN35
//******* ADDITIONAL RUNTIME JCL HERE ******
//PAYROLL  DD DSN=USER35.LEARN.PAYROL01,DISP=SHR
//EMPTYFIL  DD DSN=USER35.LEARN.EMPTYFIL,DISP=SHR
//PAYROL3A  DD DSN=USER35.LEARN.PAYROL3A,DISP=SHR
//PAYCHECK DD SYSOUT=*
//ACCTREC  DD DSN=USER35.LEARN.ACCT.DATA,DISP=SHR
//INFILE1  DD DSN=USER35.LEARN.ACCT.DATA,DISP=SHR
```

```
//OUTFILE  DD DSN=USER35.LEARN.OUTFILE,DISP=SHR
//INVALS   DD DSN=USER35.LEARN.INVALS,DISP=SHR
//PASSFILE DD DSN=USER35.LEARN.PASSFILE,DISP=SHR
//FAVIN    DD DSN=USER35.LEARN.FAVIN,DISP=SHR
//FAVRPT   DD SYSOUT=*
//PRTLINE  DD SYSOUT=*
//B37      DD DSN=USER35.LEARN.B37,DISP=SHR
//CLAIM    DD DSN=USER35.LEARN.INSCLAIM,DISP=SHR
//*RFPIN    DD DSN=&SYSUID..LEARN.FAVRFP,DISP=SHR
//RFPIN    DD *
1111111111111111111111111111111111111111111111111111111111111111111111
1
2222222222222222222222222222222222222222222222222222222222222222222222
2
3333333333333333333333333333333333333333333333333333333333333333333333
3
4444444444444444444444444444444444444444444444444444444444444444444444
4
//PROPOSAL DD SYSOUT=*
//CLAIMRPT DD SYSOUT=*
```

AND THE PROGRAM

```
       IDENTIFICATION DIVISION.
       PROGRAM-ID. USERPASS.
      ***** This MODULE Workshop 8 - Create new COBOL program
      *****  THAT CHECK FOR USER CREDENTIALS (NAME/PASSWORD)
       ENVIRONMENT DIVISION.
       INPUT-OUTPUT SECTION.
       FILE-CONTROL.
           SELECT PASS-REC  ASSIGN TO PASSFILE
                     FILE STATUS IS PASSFILE-F-STATUS.
           SELECT OUT2    ASSIGN TO PRTLINE.
       DATA DIVISION.
       FILE SECTION.
       FD  PASS-REC
           RECORDING MODE IS F
           LABEL RECORDS ARE STANDARD
           RECORD CONTAINS 80 CHARACTERS
           BLOCK CONTAINS 0 RECORDS
           DATA RECORD IS PASSFILE-REC.
       01 PASSFILE-REC.
          05 PFILE-USER                PIC X(10) .
          05 PFILE-PASS                PIC X(10).
```

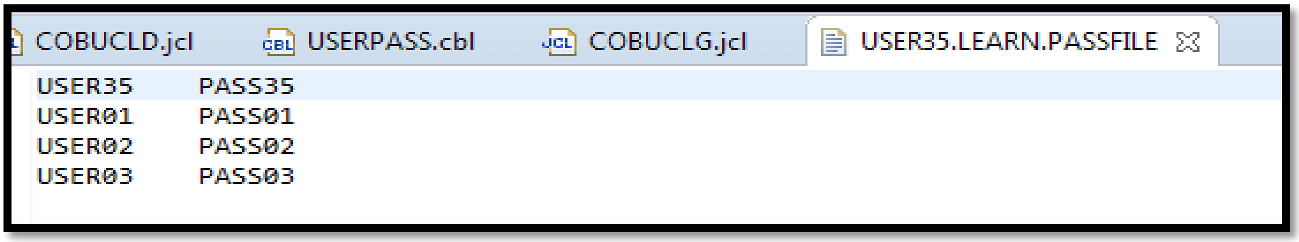
```
 FD  OUT2
     RECORDING MODE IS F
     LABEL RECORDS ARE STANDARD
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 0 RECORDS
     DATA RECORD IS OUTFILE-REC.
 01 OUTFILE-REC.
    05 FILLER            PIC X(80).
 WORKING-STORAGE SECTION.
 01 HEADER-1.
    05 FILLER                     PIC X(30)    VALUE SPACES.
    05 FILLER PIC X(30) VALUE ' PROCESSING CREDENTIALS '.
    05 FILLER                     PIC X(20)    VALUE SPACES.
 01 TRAILLER-2.
    05 FILLER PIC X(20)       VALUE 'ENTERED UserName:'.
    05 USER-NAME      PIC X(10)  VALUE  SPACES  .
    05 FILLER PIC X(20)       VALUE 'ENTERED Password:'.
    05 PASS-WORD     PIC X(10)  VALUE  SPACES  .
    05 MESSAGE-RZLT        PIC X(30)   .
 01 TRAILLER-3.
    05 FILLER PIC X(30) VALUE 'FROM PASSWORDS FILE UserName:'.
    05 USER-NAME-OUT      PIC X(10)  VALUE  SPACES  .
    05 FILLER PIC X(15)       VALUE 'READ Password:'.
    05 PASS-WORD-OUT     PIC X(10)  VALUE  SPACES  .

 77 LASTREC     PIC X.
       88 NO-MORE-RECORDS VALUE 'Y'.
 77 PASSFILE-F-STATUS PIC XX .
 77 TRIAL-KTR    PIC 9(1) VALUE 0 .
 PROCEDURE DIVISION.
     OPEN OUTPUT OUT2.
     WRITE OUTFILE-REC FROM HEADER-1.
     MOVE SPACES TO OUTFILE-REC.
     WRITE OUTFILE-REC AFTER ADVANCING 1 LINES.
     PERFORM UNTIL TRIAL-KTR = 3 OR USER-NAME IS NUMERIC
         OPEN INPUT PASS-REC
*        Prime Read
         PERFORM ACCEPT-User-Name
         PERFORM READ-RECORD
         PERFORM UNTIL LASTREC = 'Y' OR NO-MORE-RECORDS
                 PERFORM Check-User-Name
                 PERFORM WRITE-CHK-RZLT-RECORD
                 PERFORM READ-RECORD
```

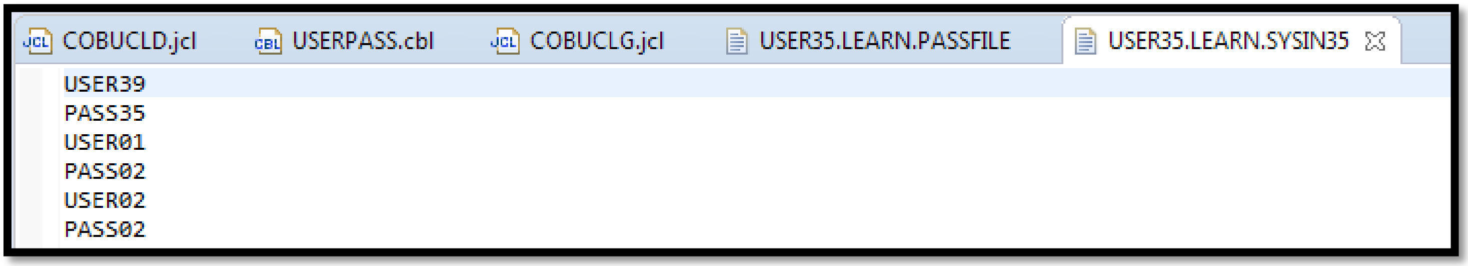
```
               END-PERFORM
               CLOSE PASS-REC
               MOVE SPACES TO LASTREC
               COMPUTE TRIAL-KTR = TRIAL-KTR + 1
            END-PERFORM
           CLOSE OUT2.
           STOP RUN.
       ACCEPT-User-Name.
           MOVE SPACES TO USER-NAME, PASS-WORD  , MESSAGE-RZLT.
           DISPLAY 'ENTER USER NAME OR NUMBER TO EXIT'
           ACCEPT USER-NAME .
           DISPLAY 'ENTER THE PASSWORD   '
           ACCEPT PASS-WORD .
           MOVE  ' JUST ENTERED ' TO MESSAGE-RZLT
           DISPLAY TRAILLER-2.
           WRITE OUTFILE-REC  FROM TRAILLER-2 .
       READ-RECORD.
           READ PASS-REC
      *         AT END   MOVE 'Y' TO LASTREC
           AT END
              PERFORM END-OF-FILE
      *    NOT AT END         PERFORM PROCESS-RECORDS
           END-READ.

       Check-User-Name.
            MOVE PFILE-USER TO  USER-NAME-OUT
            MOVE PFILE-PASS TO  PASS-WORD-OUT
            WRITE OUTFILE-REC  FROM TRAILLER-3 .
            EVALUATE TRUE ALSO TRUE
              WHEN USER-NAME NOT = PFILE-USER  ALSO TRUE
                 MOVE  'Wrong ID'  TO MESSAGE-RZLT
              WHEN USER-NAME = PFILE-USER ALSO PASS-WORD NOT= PFILE-
PASS
                 MOVE  'Bad Password'  TO MESSAGE-RZLT
              WHEN USER-NAME = PFILE-USER  ALSO PASS-WORD = PFILE-PASS
                 MOVE  'Welcome to COBOL'  TO MESSAGE-RZLT
      *          SET EXIT CONTER
                 MOVE 'Y' TO LASTREC
                 COMPUTE TRIAL-KTR = 2
              WHEN OTHER
                 MOVE  'Other condition'  TO MESSAGE-RZLT
            END-EVALUATE .
       WRITE-CHK-RZLT-RECORD.
            DISPLAY MESSAGE-RZLT
            WRITE OUTFILE-REC   FROM TRAILLER-2 .
       END-OF-FILE.
           MOVE 'Y' TO LASTREC.
```

USED FILES

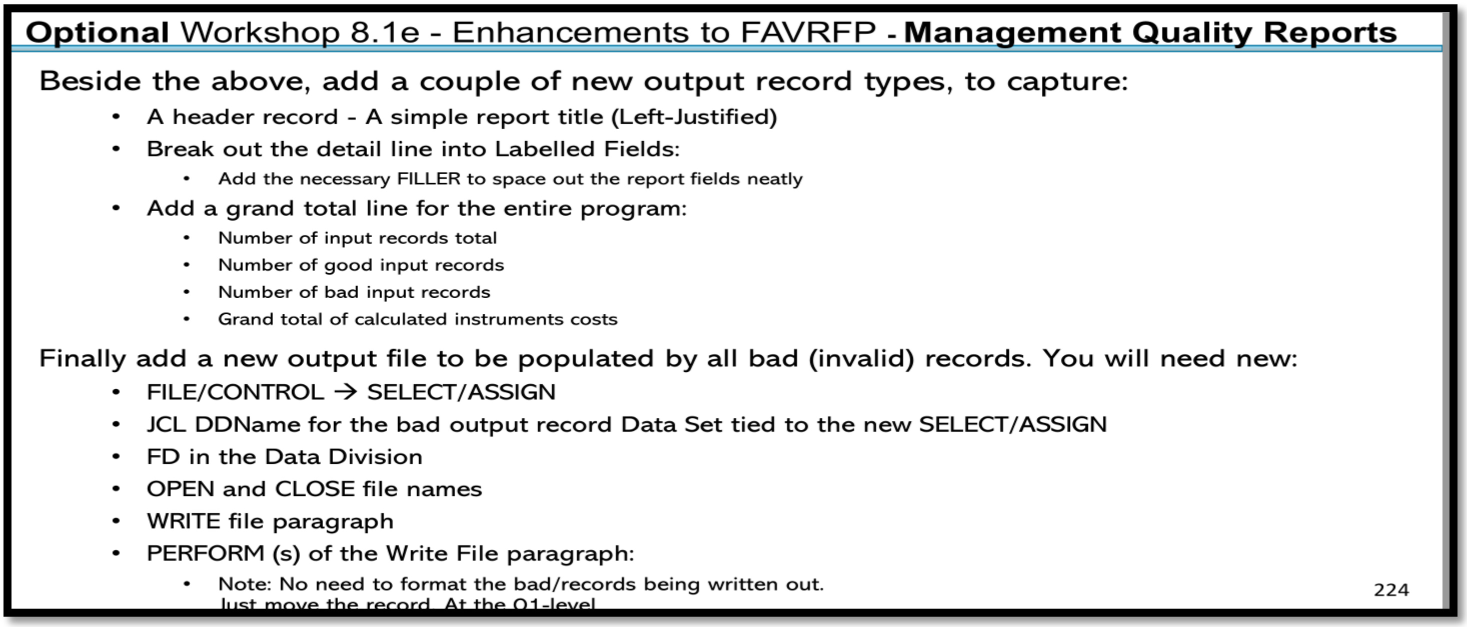


```
USER35      PASS35
USER01      PASS01
USER02      PASS02
USER03      PASS03
```



```
USER39
PASS35
USER01
PASS02
USER02
PASS02
```

Question 8.1?



Optional Workshop 8.1e - Enhancements to FAVRFP - **Management Quality Reports**

Beside the above, add a couple of new output record types, to capture:

- A header record - A simple report title (Left-Justified)
- Break out the detail line into Labelled Fields:
  - Add the necessary FILLER to space out the report fields neatly
- Add a grand total line for the entire program:
  - Number of input records total
  - Number of good input records
  - Number of bad input records
  - Grand total of calculated instruments costs

Finally add a new output file to be populated by all bad (invalid) records. You will need new:

- FILE/CONTROL → SELECT/ASSIGN
- JCL DDName for the bad output record Data Set tied to the new SELECT/ASSIGN
- FD in the Data Division
- OPEN and CLOSE file names
- WRITE file paragraph
- PERFORM (s) of the Write File paragraph:
  - Note: No need to format the bad/records being written out.
    Just move the record. At the 01-level

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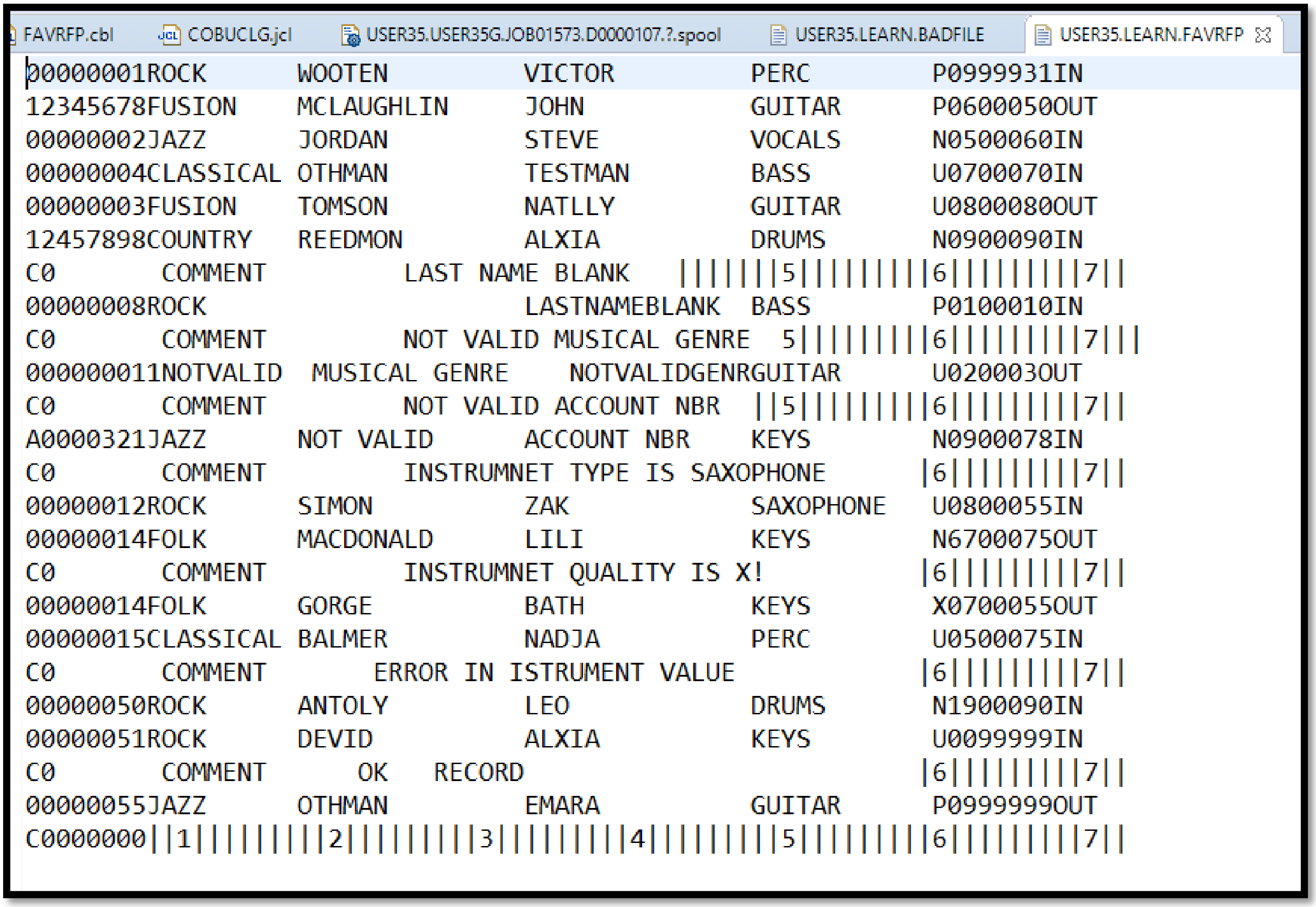
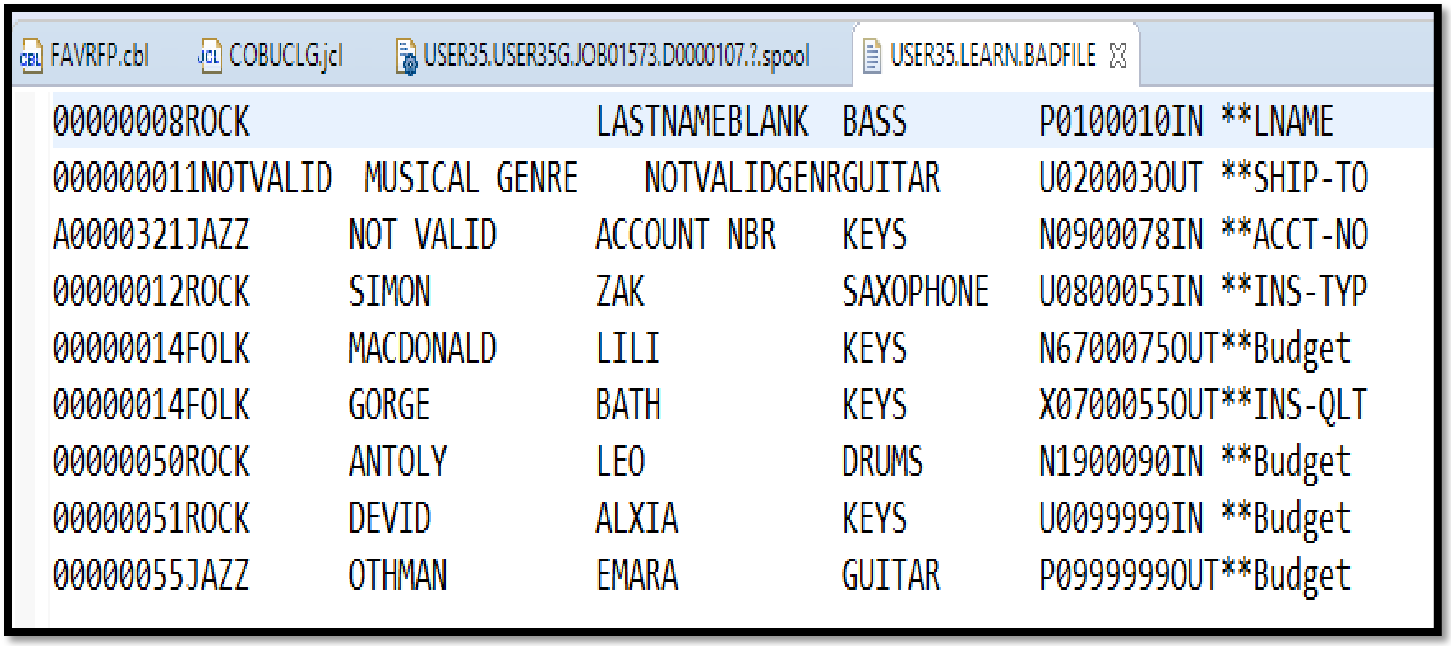
Answer :

Data to be processed / in file



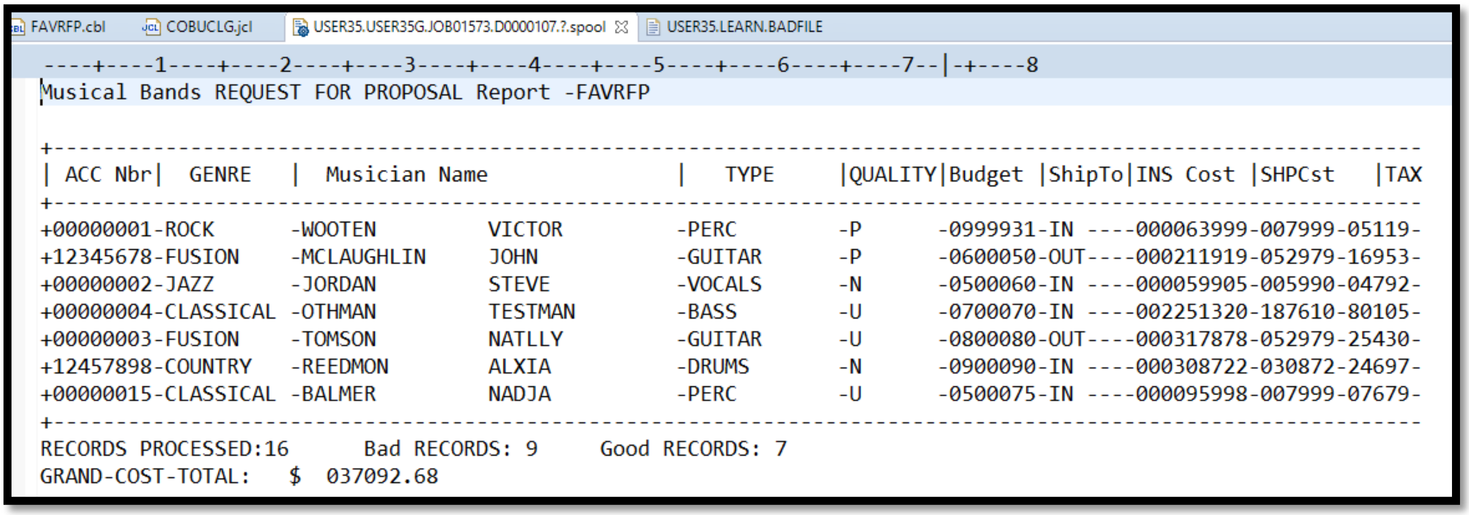
```
00000001ROCK      WOOTEN         VICTOR         PERC        P0999931IN
12345678FUSION    MCLAUGHLIN     JOHN           GUITAR      P0600050OUT
00000002JAZZ      JORDAN         STEVE          VOCALS      N0500060IN
00000004CLASSICAL OTHMAN         TESTMAN        BASS        U0700070IN
00000003FUSION    TOMSON         NATLLY         GUITAR      U0800080OUT
12457898COUNTRY   REEDMON        ALXIA          DRUMS       N0900090IN
C0       COMMENT         LAST NAME BLANK   |||||||5|||||||||6|||||||||7||
00000008ROCK                     LASTNAMEBLANK  BASS        P0100010IN
C0       COMMENT         NOT VALID MUSICAL GENRE  5|||||||||6|||||||||7|||
000000011NOTVALID  MUSICAL GENRE    NOTVALIDGENRGUITAR      U0200030OUT
C0       COMMENT         NOT VALID ACCOUNT NBR  ||5|||||||||6|||||||||7||
A0000321JAZZ      NOT VALID      ACCOUNT NBR    KEYS        N0900078IN
C0       COMMENT         INSTRUMNET TYPE IS SAXOPHONE      |6|||||||||7||
00000012ROCK      SIMON          ZAK            SAXOPHONE   U0800055IN
00000014FOLK      MACDONALD      LILI           KEYS        N6700075OUT
C0       COMMENT         INSTRUMNET QUALITY IS X!          |6|||||||||7||
00000014FOLK      GORGE          BATH           KEYS        X0700055OUT
00000015CLASSICAL BALMER         NADJA          PERC        U0500075IN
C0       COMMENT       ERROR IN ISTRUMENT VALUE            |6|||||||||7||
00000050ROCK      ANTOLY         LEO            DRUMS       N1900090IN
00000051ROCK      DEVID          ALXIA          KEYS        U0099999IN
C0       COMMENT      OK   RECORD                          |6|||||||||7||
00000055JAZZ      OTHMAN         EMARA          GUITAR      P0999999OUT
C0000000||1|||||||||2|||||||||3|||||||||4|||||||||5|||||||||6|||||||||7||
```

Identified corrupted records



```
00000008ROCK                     LASTNAMEBLANK  BASS        P0100010IN **LNAME
000000011NOTVALID  MUSICAL GENRE    NOTVALIDGENRGUITAR      U0200030OUT **SHIP-TO
A0000321JAZZ      NOT VALID      ACCOUNT NBR    KEYS        N0900078IN **ACCT-NO
00000012ROCK      SIMON          ZAK            SAXOPHONE   U0800055IN **INS-TYP
00000014FOLK      MACDONALD      LILI           KEYS        N6700075OUT**Budget
00000014FOLK      GORGE          BATH           KEYS        X0700055OUT**INS-QLT
00000050ROCK      ANTOLY         LEO            DRUMS       N1900090IN **Budget
00000051ROCK      DEVID          ALXIA          KEYS        U0099999IN **Budget
00000055JAZZ      OTHMAN         EMARA          GUITAR      P0999999OUT**Budget
```

Generated report



```
----+----1----+----2----+----3----+----4----+----5----+----6----+----7--|-+----8
Musical Bands REQUEST FOR PROPOSAL Report -FAVRFP

+----------------------------------------------------------------------------------------------------------
| ACC Nbr|  GENRE    |  Musician Name                |   TYPE     |QUALITY|Budget |ShipTo|INS Cost |SHPCst    |TAX
+----------------------------------------------------------------------------------------------------------
+00000001-ROCK      -WOOTEN        VICTOR         -PERC        -P      -0999931-IN ----000063999-007999-05119-
+12345678-FUSION    -MCLAUGHLIN    JOHN           -GUITAR      -P      -0600050-OUT----000211919-052979-16953-
+00000002-JAZZ      -JORDAN        STEVE          -VOCALS      -N      -0500060-IN ----000059905-005990-04792-
+00000004-CLASSICAL -OTHMAN        TESTMAN        -BASS        -U      -0700070-IN ----002251320-187610-80105-
+00000003-FUSION    -TOMSON        NATLLY         -GUITAR      -U      -0800080-OUT----000317878-052979-25430-
+12457898-COUNTRY   -REEDMON       ALXIA          -DRUMS       -N      -0900090-IN ----000308722-030872-24697-
+00000015-CLASSICAL -BALMER        NADJA          -PERC        -U      -0500075-IN ----000095998-007999-07679-
+----------------------------------------------------------------------------------------------------------
RECORDS PROCESSED:16      Bad RECORDS: 9     Good RECORDS: 7
GRAND-COST-TOTAL:    $  037092.68
```

```
 IDENTIFICATION DIVISION.
 PROGRAM-ID. FAVRFP.
***** This MODULE Workshop 8.1 - Create new COBOL program
*****  THAT USES A FILE READ - IF STATMENTS / EVALUATE
 ENVIRONMENT DIVISION.
 INPUT-OUTPUT SECTION.
 FILE-CONTROL.
     SELECT RFP-INFILE  ASSIGN TO RFPIN
                    FILE STATUS IS RFPIN-F-STATUS.
     SELECT BADFILE-OUT  ASSIGN TO BADFILE
                    FILE STATUS IS BAD-F-STATUS.
     SELECT RFP-RPTOUT    ASSIGN TO PROPOSAL.
 DATA DIVISION.
 FILE SECTION.
 FD  BADFILE-OUT
     RECORDING MODE IS F
     LABEL RECORDS ARE STANDARD
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 0 RECORDS
     DATA RECORD IS BAD-REC.
 01 BAD-REC PIC X(80).

 FD  RFP-INFILE
     RECORDING MODE IS F
     LABEL RECORDS ARE STANDARD
     RECORD CONTAINS 80 CHARACTERS
     BLOCK CONTAINS 0 RECORDS
     DATA RECORD IS RFPIN-REC.
 01 RFPIN-REC.
```

```cobol
   05 ARTIST-ACCT-NO.
      10 RECORD-TYPE-FLAG PIC X(01).
         88 COMMENTED-RECORD  VALUE 'C'.
      10 REST-OF-ARTIST-ACCT-NO  PIC X(07).
   05 MUSICAL-GENRE              PIC X(10).
       88  ROCK VALUE 'ROCK'.
       88  JAZZ VALUE 'JAZZ'.
       88  FUSION VALUE 'FUSION'.
       88  FOLK VALUE 'FOLK'.
       88  CLASSICAL VALUE 'CLASSICAL'.
       88  COUNTRY VALUE 'COUNTRY'.
   05  MUSICIAN.
       10 MUSICIAN-LNAME PIC X(15).
       10 MUSICIAN-FNAME PIC X(15).
   05  MUSICIAN-INSTRUMENT-TYPE PIC X(12).
        88  DRUMS        VALUE 'DRUMS'.
        88  GUITAR       VALUE 'GUITAR'.
        88  BASS         VALUE 'BASS'.
        88  VOCALS       VALUE 'VOCALS'.
        88  KEYBOARD     VALUE 'KEYS'.
        88  PERCUSSION   VALUE 'PERC'.
   05  INSTRUMENT-QUALITY  PIC X.
        88  USED-FLAG    VALUE 'U'.
        88  NEW-FLAG     VALUE 'N'.
        88  PREMIUM-FLAG VALUE 'P'.
   05 Max-Musician-Budget PIC 9(5)V99.
   05 SHIP-TO     PIC X(3).
        88  IN-COUNTRY     VALUE 'IN'.
        88  OUT-OF-COUNTRY VALUE 'OUT'.
   05  ERROR-CAUSE        PIC X(9) .
FD  RFP-RPTOUT
    RECORDING MODE IS F
    LABEL RECORDS ARE STANDARD
    RECORD CONTAINS 120 CHARACTERS
    BLOCK CONTAINS 0 RECORDS
    DATA RECORD IS RFPOUT-REC.
01 RFPOUT-REC.
   05  FILLER PIC X VALUE '|' .
   05  ARTIST-ACCT-NO-O  PIC X(08).
   05  FILLER PIC X VALUE '|' .
   05  MUSICAL-GENRE-O         PIC X(10).
   05  FILLER PIC X VALUE '|' .
   05  MUSICIAN-O PIC X(30) .
```

```
          05  FILLER PIC X VALUE '|' .
          05  MUSICIAN-INSTRUMENT-TYPE-O PIC X(12).
          05  FILLER PIC X VALUE '|' .
          05  INSTRUMENT-QUALITY-O  PIC X(7).
          05  FILLER PIC X VALUE '|' .
          05 Max-Musician-Budget-AMOUNT-o PIC 9(5)V99.
          05  FILLER PIC X VALUE '|' .
          05 SHIP-TO-o     PIC X(3).
               88  IN-COUNTRY-o    VALUE 'IN'.
               88  OUT-OF-COUNTRY-o VALUE 'OUT'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC XXX VALUE '   ' .
          05 COST-P-INST-O    PIC 9(7)V99.
          05  FILLER PIC X VALUE '|' .
          05 SHIPPING-COST-O  PIC  9(4)V99.
          05  FILLER          PIC X VALUE '|' .
          05 TAX-O            PIC 9(3)V99.
          05  FILLER PIC X VALUE '|' .
      *
       WORKING-STORAGE SECTION.
       01 HEADER-1.
          05 FILLER PIC X(22) VALUE 'Musical Bands REQUEST '.
          05 FILLER PIC X(27) VALUE 'FOR PROPOSAL Report -FAVRFP'.
          05 FILLER   PIC X(20)   VALUE SPACES.
      *
       01 BOARDR-LINE.
          05 FILLER PIC X(30) VALUE '+-----------------------------'.
          05 FILLER PIC X(30) VALUE '------------------------------'.
          05 FILLER PIC X(30) VALUE '------------------------------'.
          05 FILLER PIC X(30) VALUE '-----------------------------+'.
      *
       01 COLUMS-HEADING.
          05  FILLER PIC X VALUE '|' .
          05  FILLER  PIC X(08)  VALUE ' ACC Nbr'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC X(10) VALUE '  GENRE   '.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC X(30) VALUE '  Musician Name   '.
          05  FILLER PIC X VALUE '|' .
          05  FILLER  PIC X(12) VALUE '   TYPE   '.
          05  FILLER PIC X VALUE '|' .
          05  FILLER  PIC X(7) VALUE 'QUALITY'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER  PIC X(7) VALUE 'Budget'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC X(6) VALUE 'ShipTo'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC X(9) VALUE 'INS Cost'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC X(9) VALUE 'SHPCst'.
          05  FILLER PIC X VALUE '|' .
          05  FILLER PIC X(9) VALUE 'TAXCst'.
          05  FILLER PIC X VALUE '|' .
      *
       01 TRAILLER-1.
          05 FILLER PIC X(18)   VALUE 'RECORDS PROCESSED:'.
          05 REC-KTR-ALL-O         PIC z9 VALUE ZEROS .
          05 FILLER PIC X(18) VALUE '      Bad RECORDS:'
                           JUSTIFIED RIGHT.
          05 REC-KTR-BAD-O         PIC z9 VALUE ZEROS .
          05 FILLER PIC X(18)   VALUE '     Good RECORDS:'
                                  JUSTIFIED RIGHT.
          05 REC-KTR-GOOD-O       PIC z9 VALUE ZEROS .
      *
       01 TRAILLER-2.
          05 FILLER PIC X(20)     VALUE 'GRAND-COST-TOTAL:'.
          05 GRAND-COST-TOTAL-O    PIC $ZZ9(6).99 VALUE ZEROS .
      *
       77 RFPIN-REC2   PIC X(80).
       77 RFPIN-F-STATUS    PIC XX.
       77 BAD-F-STATUS      PIC XX.
       77 LASTREC     PIC X VALUE ' '.
           88  NO-MORE-RECORDS VALUE 'Y'.
       77 ERRORROTIC-FLAG PIC X VALUE ' '.
           88  THERE-IS-ERROR VALUE 'Y'.
       77 REC-KTR-ALL          PIC 99 VALUE ZEROS .
       77 REC-KTR-BAD          PIC 99 VALUE ZEROS .
       77 REC-KTR-GOOD         PIC 99 VALUE ZEROS .
       77 GRAND-COST-TOTAL     PIC  9(6)V99 VALUE ZEROS .
       PROCEDURE DIVISION.
           OPEN INPUT RFP-INFILE.
           OPEN OUTPUT RFP-RPTOUT.
           OPEN OUTPUT BADFILE-OUT.
           INITIALIZE TRAILLER-1 , TRAILLER-2 .
           WRITE RFPOUT-REC FROM HEADER-1.
           MOVE SPACES TO RFPOUT-REC.
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     WRITE RFPOUT-REC AFTER ADVANCING 1 LINES.
*    Prime Read
     PERFORM READ-RECORD.
     PERFORM UNTIL LASTREC = 'Y' OR NO-MORE-RECORDS
             PERFORM PROCESS-RCDS
             PERFORM WRITE-RPT-OUT-REC
             PERFORM READ-RECORD
     END-PERFORM
     PERFORM WRITE-LAST-REC
     PERFORM CLOSE-FILES
     STOP RUN.
 WRITE-TABLE-BORDER-COL-HEAD.
       WRITE RFPOUT-REC FROM BOARDR-LINE .
       WRITE RFPOUT-REC FROM COLUMS-HEADING .
       WRITE RFPOUT-REC FROM BOARDR-LINE .

 READ-RECORD.
     READ RFP-INFILE
     AT END  PERFORM END-OF-FILE
*    NOT AT END  PERFORM PROCESS-RCDS
     END-READ.
 PROCESS-RCDS.
     IF NOT COMMENTED-RECORD
        PERFORM  PROCSS-A-NOT-COMMENTED-RCD
     END-IF.

 PROCSS-A-NOT-COMMENTED-RCD .
     COMPUTE REC-KTR-ALL = REC-KTR-ALL + 1 .
     MOVE SPACES TO ERRORROTIC-FLAG
     PERFORM CHECK-IS-VALID-REC.
     IF  THERE-IS-ERROR THEN
         COMPUTE REC-KTR-BAD = REC-KTR-BAD + 1
         WRITE BAD-REC FROM RFPIN-REC
     ELSE
         COMPUTE REC-KTR-GOOD = REC-KTR-GOOD + 1
         COMPUTE GRAND-COST-TOTAL = GRAND-COST-TOTAL +
           TAX-O + SHIPPING-COST-O + COST-P-INST-O
     END-IF.

  WRITE-RPT-OUT-REC.
     IF REC-KTR-GOOD = 1 then
          PERFORM WRITE-TABLE-BORDER-COL-HEAD
      End-if.
     IF  REC-KTR-GOOD >= 1  AND   NOT THERE-IS-ERROR  AND
          NOT COMMENTED-RECORD THEN
         MOVE ARTIST-ACCT-NO TO ARTIST-ACCT-NO-O
         MOVE MUSICAL-GENRE TO MUSICAL-GENRE-O
         MOVE MUSICIAN TO MUSICIAN-O
         MOVE MUSICIAN-INSTRUMENT-TYPE
            TO MUSICIAN-INSTRUMENT-TYPE-O
         MOVE INSTRUMENT-QUALITY TO INSTRUMENT-QUALITY-O
         MOVE Max-Musician-Budget TO
               Max-Musician-Budget-AMOUNT-o
         MOVE SHIP-TO TO SHIP-TO-o
         PERFORM  MAKE-REC-CALC
         WRITE RFPOUT-REC
     END-IF.

 CLOSE-FILES.
     CLOSE RFP-INFILE.
     CLOSE RFP-RPTOUT.
     CLOSE BADFILE-OUT.
 END-OF-FILE.
      MOVE 'Y' TO LASTREC.
 WRITE-LAST-REC.
*    last Record Calculations
     WRITE RFPOUT-REC FROM BOARDR-LINE .
     MOVE  REC-KTR-ALL  TO REC-KTR-ALL-O.
     MOVE  REC-KTR-BAD  TO REC-KTR-BAD-O.
     MOVE  REC-KTR-GOOD  TO REC-KTR-GOOD-O.
     MOVE  GRAND-COST-TOTAL  TO GRAND-COST-TOTAL-O.
     WRITE RFPOUT-REC FROM TRAILLER-1.
*     FILL TRAILLER-2
     WRITE RFPOUT-REC FROM TRAILLER-2 .

 CHECK-IS-VALID-REC.
* HERE WE PUT ALL RECORDS VALIDATION RULES
     MOVE SPACES TO ERRORROTIC-FLAG
     MOVE SPACES TO ERROR-CAUSE
     EVALUATE TRUE
     WHEN  NOT ARTIST-ACCT-NO IS  NUMERIC
           MOVE 'Y' TO ERRORROTIC-FLAG
           MOVE '**ACCT-NO' TO ERROR-CAUSE
     WHEN MUSICIAN-LNAME IS ALPHABETIC
                 AND MUSICIAN-LNAME = SPACES
              MOVE 'Y' TO ERRORROTIC-FLAG
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                    MOVE '**LNAME' TO ERROR-CAUSE
           WHEN MUSICIAN-FNAME IS ALPHABETIC
                       AND MUSICIAN-FNAME = SPACES
                    MOVE 'Y' TO ERRORROTIC-FLAG
                    MOVE '**FNAME' TO ERROR-CAUSE
           WHEN  NOT (Max-Musician-Budget >= 1000
                 AND Max-Musician-Budget < 9999.99)
                    MOVE 'Y' TO ERRORROTIC-FLAG
                    MOVE '**Budget' TO ERROR-CAUSE
           END-EVALUATE.

           EVALUATE TRUE
             WHEN MUSICAL-GENRE = 'ROCK' OR MUSICAL-GENRE = 'FOLK' OR
                MUSICAL-GENRE = 'JAZZ' OR MUSICAL-GENRE = 'FUSION' OR
                MUSICAL-GENRE = 'CLASSICAL' OR MUSICAL-GENRE =
'COUNTRY'
                MOVE MUSICAL-GENRE TO MUSICAL-GENRE
             WHEN  OTHER
               MOVE 'Y' TO ERRORROTIC-FLAG
               MOVE '**GENRE' TO ERROR-CAUSE
           END-EVALUATE.

      *
           EVALUATE TRUE
               WHEN INSTRUMENT-QUALITY ='P' OR INSTRUMENT-QUALITY =
'U'
                OR INSTRUMENT-QUALITY =  'N'
                  MOVE INSTRUMENT-QUALITY TO INSTRUMENT-QUALITY
               WHEN  OTHER
                   MOVE 'Y' TO ERRORROTIC-FLAG
                   MOVE '**INS-QLTY' TO ERROR-CAUSE
           END-EVALUATE.
      *
           EVALUATE TRUE
               WHEN SHIP-TO = 'IN ' or SHIP-TO =  'OUT'
                MOVE SHIP-TO TO SHIP-TO
               WHEN  OTHER
                   MOVE 'Y' TO ERRORROTIC-FLAG
                   MOVE '**SHIP-TO' TO ERROR-CAUSE
           END-EVALUATE.
      *
           EVALUATE TRUE
            WHEN MUSICIAN-INSTRUMENT-TYPE = 'DRUMS' or
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                 MUSICIAN-INSTRUMENT-TYPE =  'GUITAR' or
                 MUSICIAN-INSTRUMENT-TYPE = 'BASS'  or
                 MUSICIAN-INSTRUMENT-TYPE =  'VOCALS' or
                 MUSICIAN-INSTRUMENT-TYPE = 'KEYS' or
                 MUSICIAN-INSTRUMENT-TYPE =  'PERC'
               MOVE MUSICIAN-INSTRUMENT-TYPE TO MUSICIAN-INSTRUMENT-
TYPE
            WHEN  OTHER
               MOVE 'Y' TO ERRORROTIC-FLAG
               MOVE '**INS-TYP' TO ERROR-CAUSE
           END-EVALUATE.
      *
       MAKE-REC-CALC.
           EVALUATE MUSICIAN-INSTRUMENT-TYPE
               WHEN 'DRUMS'
                  COMPUTE  COST-P-INST-O  = 3087.22
               WHEN 'GUITAR'
                  COMPUTE  COST-P-INST-O  =  2648.99
               WHEN 'BASS'
                   COMPUTE  COST-P-INST-O  = 18761
               WHEN 'VOCALS'
                   COMPUTE COST-P-INST-O  = 599.05
               WHEN 'KEYS'
                   COMPUTE COST-P-INST-O  =3017.89
               WHEN 'PERC'
                   COMPUTE COST-P-INST-O  = 799.99
            END-EVALUATE.
      *
            EVALUATE SHIP-TO
               WHEN  'IN '
                   COMPUTE SHIPPING-COST-O = COST-P-INST-O * 0.1
               WHEN 'OUT'
                   COMPUTE SHIPPING-COST-O = COST-P-INST-O * 0.2
           END-EVALUATE.
      *          *
           EVALUATE INSTRUMENT-QUALITY
               WHEN 'P'
                    COMPUTE COST-P-INST-O = COST-P-INST-O * 0.8
               WHEN 'U'
                    COMPUTE COST-P-INST-O = COST-P-INST-O * 1.2
           END-EVALUATE.
      *
            COMPUTE TAX-O = COST-P-INST-O * 0.08.
```