APPENDIX H - FORTRAN EXAMPLES

This chapter covers the following topics:

- Example 1
- Example 2
- Example 3

Example 1

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      PROGRAM FEX1
C       AN EXAMPLE OF SOFT COUPLING WITH A SEARCH CRITERION WHICH
C       CONTAINS FIELDS TAKEN FROM TWO FILES. THE FIELDS PERSONNEL-ID
C       NAME, FIRST-NAME, BIRTH AND SEX (FROM THE MAIN FILE,
C       PERSONNEL-ID) ARE PRINTED FOR RECORDS THAT SATISFY THE
C       FOLLOWING CONDITION:
C           PERSONNEL-ID BETWEEN 10000001 AND 19999999
C           MODEL-YEAR-MAKE >
C           CLASS = 'C'
      CHARACTER*22  STARTS
      CHARACTER*20  STARTM  /'MERCEDES BENZ'/
      CHARACTER*2   STAYM   /'86'/
      EQUIVALENCE  (STARTS,STARTM)
      EQUIVALENCE  (STARTS(21:21),STAYM)
C
           EXEC ADABAS
      BEGIN DECLARE SECTION
           END-EXEC
C
           EXEC ADABAS
      DECLARE EMPL CURSOR FOR
      SELECT PERSONNEL-ID, NAME, FIRST-NAME, BIRTH, SEX
      FROM EMPLOYEES, VEHICLES
      WHERE EMPLOYEES.PERSONNEL-ID = VEHICLES.PERSONNEL-ID
            AND PERSONNEL-ID BETWEEN '10000001' AND '19999999'
            AND VEHICLES.MODEL-YEAR-MAKE > :STARTS
            AND VEHICLES.CLASS = 'C'
           END-EXEC
C
      WRITE (6,10)
C
           EXEC ADABAS
      OPEN EMPL
           END-EXEC
C
           EXEC ADABAS
      FETCH EMPL
           END-EXEC
C
    1 IF (SQLCOD .EQ. 3) GOTO 2
C
         WRITE (6,20) PID,NAME,FNAME,BIRTH,SEX
C
              EXEC ADABAS
         FETCH EMPL
```

```
              END-EXEC
C
      GOTO 1
C




    2 CONTINUE
C
           EXEC ADABAS
      CLOSE EMPL
           END-EXEC
C
           EXEC ADABAS
      DBCLOSE
           END-EXEC
C
    10 FORMAT ('1PERSONNEL-ID',8X,'NAME',13X,'FIRST-NAME',8X,
     *        'BIRTH',1X,'SEX' / 1X,64('*') / )
  20 FORMAT (3X,A8,3X,A20,1X,A20,1X,A6,1X,A1)
C
      END
```

Example 2

```
      PROGRAM FEX2
C        DELETE AN EMPLOYEE RECORD AND RELEASE ALL CARS WHICH ARE
C        ASSIGNED TO THIS EMPLOYEE. A PRIVATE CARS WILL BE DELETED
C        AND A COMPANY CAR WILL BE MADE A POOL-CAR WHICH IS IDENTIFIED
C        BY ITS PERSONNEL-ID CONTAINING ONLY THE COUNTRY CODE.
C
      CHARACTER*8  PERSNR  /'20007100'/
      INTEGER*4    EMPISN
      CHARACTER*15 CNUM
      CHARACTER*1  CNO
      EQUIVALENCE  (CNUM,CNO)
C
           EXEC ADABAS
      BEGIN DECLARE SECTION
           END-EXEC
C
           EXEC ADABAS
      READ LOGICAL
      DECLARE VEH1 CURSOR FOR
      SELECT REG-NUM, PERSONNEL-ID, CLASS
      FROM VEHICLES
      WHERE PERSONNEL-ID GE :PERSNR
      OPTIONS HOLD
      ORDER BY PERSONNEL-ID
           END-EXEC
C
C     FIND EMPLOYEE
C
           EXEC ADABAS
      FIND
      SELECT
      FROM EMPLOYEES EMPL1
      WHERE PERSONNEL-ID = :PERSNR
      OPTIONS HOLD
           END-EXEC
```

```
C
C         IF THE PERSONNEL-ID EXISTS DELETE THE EMPLOYEE AND READ THE
C         VEHICLES FILE
C
      IF (SQLQTY .EQ. 1) THEN
         EMPISN = SQLISN
         GOTO 3
    1    GOTO 4
      ELSE
         WRITE (6,10) PERSNR
      END IF
C
    2 CONTINUE
C
           EXEC ADABAS
      DBCLOSE
           END-EXEC
C
      STOP

C
C*** DELETE EMPLOYEE
C
    3 CONTINUE
C
           EXEC ADABAS
      DELETE
      FROM EMPLOYEES
      WHERE ISN = :EMPISN
           END-EXEC
C
      WRITE (6,20) PERSNR
C
      GOTO 1
C
C*** DEALLOCATE CARS
C
    4 CONTINUE
C
           EXEC ADABAS
      OPEN VEH1
           END-EXEC
C
           EXEC ADABAS
      FETCH VEH1
           END-EXEC
C
    5 IF (SQLCOD .EQ. 3 .OR. PID .NE. PERSNR) GOTO 6
C
          IF (CLASS .EQ. 'P') THEN
                  EXEC ADABAS
               DELETE
               FROM VEHICLES
               WHERE CURRENT OF VEH1
                  END-EXEC
               WRITE (6,30) REGNUM
          ELSE
               CNUM = PID
               PID = CNO
                  EXEC ADABAS
               UPDATE VEHICLES
               WHERE CURRENT OF VEH1
```

```
                END-EXEC
             WRITE (6,40) REGNUM
          END IF
C
             EXEC ADABAS
          FETCH VEH1
             END-EXEC
C
          GOTO 5
C
    6 CONTINUE
C
          EXEC ADABAS
       CLOSE VEH1
          END-EXEC
C
          EXEC ADABAS
       COMMIT WORK
          END-EXEC
C
       GOTO 2

C
   10 FORMAT (' NO EMPLOYEE FOUND WITH PERSONNEL-ID ',A8)
   20 FORMAT (' EMPLOYEE ',A8,' HAS BEEN DELETED')
   30 FORMAT (' PRIVATE CAR ',A15,' HAS BEEN DELETED')
   40 FORMAT (' COMPANY CAR ',A15,' HAS BEEN UPDATED')
      END
```

Example 3

```
      PROGRAM FEX3
C        SALARY INCREASE.
C        THIS PROGRAM INCREASES THE SALARY OF EVERY EMPLOYEE BY
C        4 PERCENT.
C        THE DEPARTMENT, THE OVERALL AMOUNT OF PAY RISE FOR THE
C        DEPARTMENT AND THE PAY RISE FOR ALL DEPARTMENTS WILL BE PRINTED
C        OUT.
C        THE PROGRAM IS RESTARTABLE. AFTER AN ABNORMAL TERMINATION THE
C        PROGRAM EXECUTION WOULD RESTART WITH THE LAST DEPARTMENT
C        WHOSE SALARY UPDATE HAD BEEN COMPLETED BEFORE THE ABEND
C        OCCURED.
C
      CHARACTER*10 COMDAT
      CHARACTER*6  COMDEP
      INTEGER*4    COMSUM
      EQUIVALENCE  (COMDAT,COMDEP)
      EQUIVALENCE  (COMDAT(7:7),COMSUM)
      CHARACTER*6  SDEP
      INTEGER*4    IND, I, J, NEWSAL, INCRS, SUMDEP, SUMTOT, E1QTY
C
           EXEC ADABAS
      BEGIN DECLARE SECTION
           END-EXEC
C
           EXEC ADABAS
      HISTOGRAM
      DECLARE EMP1 CURSOR FOR
      SELECT  DEPT
      FROM EMPLOYEES E1
      WHERE DEPT GE :COMDEP
```

```
      OPTIONS PREFIX=E1
      GROUP BY DEPT
           END-EXEC
C
           EXEC ADABAS
      READ LOGICAL
      DECLARE EMP2 CURSOR FOR
      SELECT PERSONNEL-ID, DEPT, SALARY, INCOME(COUNT)
      FROM EMPLOYEES
      WHERE DEPT GE :SDEP
      OPTIONS HOLD
      ORDER BY DEPT
           END-EXEC
C
           EXEC ADABAS
      CONNECT 'INCREASE'
      UPD=EMPLOYEES
      AND USERDATA INTO :COMDAT
           END-EXEC
C
C     A HISTOGRAM STATEMENT IS USED TO ASCERTAIN THE NUMBER OF
C     EMPLOYEES PER DEPARTMENT
C
           EXEC ADABAS
      OPEN EMP1
           END-EXEC

C
           EXEC ADABAS
      FETCH EMP1
           END-EXEC
      E1QTY = SQLQTY
C
      IF (COMDAT .NE. ' ') THEN
C
C          RESTART PROCESSING
C
           WRITE (6,*) 'LAST PROGRAM RUN TERMINATED ABNORMALLY'
           WRITE (6,50) COMDEP
C
                EXEC ADABAS
           FETCH EMP1
                END-EXEC.
           E1QTY = SQLQTY
      END IF
C
      SDEP = E1DEPT
C
           EXEC ADABAS
      OPEN EMP2
           END-EXEC
C
      WRITE (6,10)
C
    1 IF (SQLCOD .EQ. 3) GOTO 4
C
C     THE EMPLOYEES FILE WILL BE READ UNTIL ALL RECORDS FOR THE
C     DEPARTMENT HAVE BEEN PROCESSED AND THE SALARY HAS BEEN
C     UPDATED
C
      DO 3 J=1, E1QTY
                EXEC ADABAS
```

```
           FETCH EMP2
                END-EXEC
C            THE SALARY INCREASE CAN BE EXECUTED WHEN THE COUNT OF THE
C            PERIODIC GROUP IS LESS THAN 40.
           IF (CINC .LT. 40) THEN
              INCRS = NINT(REAL(SALARY(1)) * 0.04)
              NEWSAL = SALARY(1) + INCRS
              IND = CINC + 1
C
              DO 2 I = CINC, 0, -1
                   SALARY(IND) = SALARY(I)
                   IND = IND - 1
    2         CONTINUE
C
              SALARY(1) = NEWSAL
C
                  EXEC ADABAS
              UPDATE EMPLOYEES
              WHERE CURRENT OF EMP2
                  END-EXEC
C
              SUMDEP = SUMDEP + INCRS
              SUMTOT = SUMTOT + INCRS
           ELSE
              WRITE (6,40) PID
           END IF
C
    3 CONTINUE

C
      WRITE (6,20) DEPT, SUMDEP
      SUMDEP = 0
C
      COMDEP = DEPT
      COMSUM = SUMTOT
          EXEC ADABAS
      COMMIT WORK
      USERDATA = :COMDAT
          END-EXEC
C
           EXEC ADABAS
      FETCH EMP1
          END-EXEC
      E1QTY = SQLQTY
C
      GOTO 1
C
    4 CONTINUE
C
           EXEC ADABAS
      CLOSE EMP1
           END-EXEC
C
           EXEC ADABAS
      CLOSE EMP2
           END-EXEC
C
      WRITE (6,30) SUMTOT
      COMDAT = ' '
C
           EXEC ADABAS
      DBCLOSE
```

```
      USERDATA = :COMDAT
           END-EXEC
C
   10 FORMAT (' DEPARTMENT',15X,'SALARY INCREASE'/1X,40('*'))
   20 FORMAT (4X,A6,16X,I10)
   30 FORMAT (/50('-')//' TOTAL SALARY INCREASE : ',I11)
   40 FORMAT (' UPDATE PERSON ',A8,' NOT POSSIBLE')
   50 FORMAT (' LAST DEPARTMENT WAS ',A6)
      END
```