

APPENDIX E - EXAMPLE OF ADA CODE GENERATED BY ADABAS NATIVE SQL

```

with TYPES, ADABAS_GENERIC_CALLS, TEXT_IO ;
use  TYPES, TEXT_IO ;
--
-- AN EXAMPLE OF SOFT COUPLING WITH A SEARCH CRITERION WHICH
-- CONTAINS FIELDS TAKEN FROM TWO FILES.  THE FIELDS PERSONNEL-ID
-- NAME, FIRST-NAME, BIRTH AND SEX (FROM THE MAIN FILE,
-- PERSONNEL-ID) ARE PRINTED FOR RECORDS THAT SATISFY THE
-- FOLLOWING CONDITION:
--     PERSONNEL-ID BETWEEN 10000001 AND 19999999
--     MODEL-VEAR-MAKE >
--     CLASS = 'C'

procedure AEX1 is
  START_MODEL : STRING (1..20) := "MERCEDES-BENZ      ";
  START_YEAR_MAKE : STRING (1..2) := "86" ;
  START_MODEL_YEAR_MAKE : STRING(1..22) := START_MODEL &
                                           START_YEAR_MAKE ;

  FILLE1 : STRING(1..20) := " PERSONNEL-ID          " ;
  FILLE2 : STRING(1..17) := " NAME                  " ;
  FILLE3 : STRING(1..18) := " FIRST-NAME           " ;
  FILLE4 : STRING(1..6) := "BIRTH      " ;
  FILLE5 : STRING(1..3) := "SEX" ;
  HEADER : STRING(1..64) := FILLE1 & FILLE2 & FILLE3 & FILLE4
                           & FILLE5 ;

  HEADER2: STRING(1..64) := (1..64 => '*');
  SPACE_LINE : STRING(1..80) := (1..80 => ' ');

--
--     EXEC ADABAS
-- BEGIN DECLARE SECTION
--     END-EXEC
--

  ADACODE : SHORT_INTEGER := 0 ;
  CB_OPN : CONTROL_BLOCK :=
    (FILLER1           => "AS"           ,
     COMMAND_CODE      => " "           ,
     COMMAND_ID        => "OPEN"        ,
     FILE_NUMBER       =>              0,
     RESPONSE_CODE     =>              0,
     ISN               =>              0,
     ISN_LOWER_LIMIT   =>              0,
     ISN_QUANTITY      =>              0,
     FORMAT_BUFFER_LENGTH =>            0,
     RECORD_BUFFER_LENGTH =>            0,
     SEARCH_BUFFER_LENGTH =>            0,
     VALUE_BUFFER_LENGTH  =>            0,
     ISN_BUFFER_LENGTH  =>              4,
     COMMAND_OPTION_1   => " "           ,
     COMMAND_OPTION_2   => " "           ,
     ADDITIONS_1        => "            " ,
     ADDITIONS_2        => "            " ,
     ADDITIONS_3        => "            " ,
     ADDITIONS_4        => "            " ,
     ADDITIONS_5        => "            " ,
     COMMAND_TIME       =>              0,

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                                USER_AREA                => "AS " ) ;
FORMAT_BUF_OPN                :  FORMAT_BUFFER (1..0001) ;
SEARCH_BUF_OPN                :  SEARCH_BUFFER (1..0001) ;
VB_OPN                        :  VALUE_BUFFER (1..0001) ;
RB_OPN                        :  RECORD_BUFFER (1..1500) ;
ISN_BUF_OPN                   :  ISN_BUFFER (1..0001) ;
package A_OPN is new ADABAS_GENERIC_CALLS
(FORMAT_BUFFER, RECORD_BUFFER, SEARCH_BUFFER, VALUE_BUFFER) ;
DDFILE      :  STRING(1..3)  :=          "061"          ;
CSEQ        :  STRING(1..8)  ;
CLN1        :  CLN_TYPE      ;
CLN2        :  CLN_TYPE      ;
TRCE        :  STRING(1..7)  ;
CLNNUM      :  SHORT_INTEGER ;
SQLRSP      :  SHORT_INTEGER ;
SQLQTY      :  INTEGER       ;
SQLISN      :  INTEGER       ;
type FORMAT_BUFEMPL_1          is
record
    FILLE001 :  STRING(1..32) := "AA, 8, A, AE, 20, A, AC, 20, A, AH, 6, U, AG";
    FILLE002 :  STRING(1..05) := ", 1, A. ";
end record
FORMAT_BUFEMPL                  :  FORMAT_BUFEMPL_1
type SEARCH_BUFEMPL_1          is
record
    FILLE001 :  STRING(1..32) := "(22, AA, 24, AC)/22/AA, 8, A, S, AA, 8, A";
    FILLE002 :  STRING(1..27) := ", D, /24/A0, 22, A, GT, D, AH, 1, A. ";
end record
SEARCH_BUFEMPL                  :  SEARCH_BUFEMPL_1
type RECORD_BUFEMPL            is
record
    PERSONNEL_ID                :  STRING (1..0008) ;
    NAME                        :  STRING (1..0020) ;
    FIRST_NAME                  :  STRING (1..0020) ;
    BIRTH                       :  STRING (1..0006) ;
    SEX                         :  STRING (1..0001) ;
    ISN                         :  INTEGER ;
    QUANTITY                    :  INTEGER ;
    RESPONSE_CODE               :  SHORT_INTEGER ;
end record
EMPLOYEES                       :  RECORD_BUFEMPL
type VALUE_BUFEMPL              is
record
    V_PERSONNEL_ID_F            :  STRING (1..0008)
                                := (1..0008 => ' ' ) ;
    V_PERSONNEL_ID_T            :  STRING (1..0008)
                                := (1..0008 => ' ' ) ;
    V_MODEL_YEAR_MAKE           :  STRING (1..0022)
                                := (1..0022 => ' ' ) ;
    V_CLASS                     :  STRING (1..0001)
                                := (1..0001 => ' ' ) ;
end record
VBEMPL                          :  VALUE_BUFEMPL
ISN_BUFEMPL                     :  ISN_BUFFER (1..0001) ;
package AEMPL is new ADABAS_GENERIC_CALLS
(FORMAT_BUFEMPL_1, RECORD_BUFEMPL, SEARCH_BUFEMPL_1, VALUE_BUFEMPL) ;
CBEMPL : CONTROL_BLOCK :=
(FILLER1                        => "AS" ,
COMMAND_CODE                    => " " ,
COMMAND_ID                      => "EMPL" ,
FILE_NUMBER                     => 22,

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RESPONSE_CODE      =>      0,
ISN                 =>      0,
ISN_LOWER_LIMIT     =>      0,
ISN_QUANTITY        =>      0,
FORMAT_BUFFER_LENGTH =>     37,
RECORD_BUFFER_LENGTH =>     55,
SEARCH_BUFFER_LENGTH =>     59,
VALUE_BUFFER_LENGTH  =>     39,
ISN_BUFFER_LENGTH    =>      4,
COMMAND_OPTION_1     => " " ,
COMMAND_OPTION_2     => " " ,
ADDITIONS_1          => " " ,
ADDITIONS_2          => " " ,
ADDITIONS_3          => " " ,
ADDITIONS_4          => " " ,
ADDITIONS_5          => " " ,
COMMAND_TIME         =>      0,
USER_AREA            => "AS " ) ;

ISNSIZEEMPL         :  INTEGER ;
ISNMOREEMPL         :  INTEGER ;
ISNINDEEMPL         :  INTEGER ;
EOFEMPL             :  BOOLEAN := FALSE ;

--
--      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 > :START_MODEL_YEAR_MAKE
--        AND VEHICLES.CLASS = "C"
--  END-EXEC

--
begin

--
--      EXEC ADABAS
--  OPEN EMPL
--  END-EXEC
--
      VBEMPL.V_PERSONNEL_ID_F := "10000001" ;
      VBEMPL.V_PERSONNEL_ID_T := "19999999" ;
      VBEMPL.V_MODEL_YEAR_MAKE := START_MODEL_YEAR_MAKE ;
      VBEMPL.V_CLASS := "C" ;
      ISNSIZEEMPL := INTEGER(CBEMPL.ISN_BUFFER_LENGTH / 4) ;
      ISNINDEEMPL := 1 ;
      CBEMPL.ISN_LOWER_LIMIT := 0 ;
      CBEMPL.COMMAND_OPTION_1 := " " ;
      CBEMPL.COMMAND_OPTION_2 := " " ;
      CBEMPL.ISN_QUANTITY := 0 ;
      CBEMPL.ISN_BUFFER_LENGTH := 0 ;
      CBEMPL.COMMAND_CODE := "S1" ;
      AEMPL.ADABAS (
        CBEMPL, FORMAT_BUFEMPL,
        EMPLOYEES, SEARCH_BUFEMPL, VBEMPL,
        ISN_BUFEMPL
      ) ;
      EMPLOYEES.RESPONSE_CODE :=
        CBEMPL.RESPONSE_CODE ;
      EMPLOYEES.QUANTITY :=

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                                CBEMPL.ISN_QUANTITY ;
EMPLOYEES.ISN                               :=
                                CBEMPL.ISN ;
if CBEMPL.RESPONSE_CODE /= 0
then
CSEQ := "00000000" ;
CLN1(01) := "          EXEC ADABAS          " ;
CLN2(01) := "          " ;
CLN1(02) := "          OPEN EMPL          " ;
CLN2(02) := "          " ;
CLN1(03) := "          END-EXEC          " ;
CLN2(03) := "          " ;
CLNNUM := 03 ;
    AEMPL.RESPF
        (CBEMPL,DDFILE,CSEQ,FORMAT_BUFEMPL,
         EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
         CLN1,CLN2,TRCE,CLNNUM) ;
    end if ;
ISNMOREEMPL := CBEMPL.ISN_QUANTITY ;
if ISNMOREEMPL > 0 then
    EOFEMPL := FALSE ;
else
    EOFEMPL := TRUE ;
end if ;
if ISNMOREEMPL < ISNSIZEEMPL then
    ISNSIZEEMPL := ISNMOREEMPL ;
end if ;
ISNINDEMPL :=0 ;

PUT_LINE (HEADER) ;
PUT_LINE (HEADER2) ;
PUT_LINE (SPACE_LINE) ;

--
--      EXEC ADABAS
--  FETCH EMPL
--      END-EXEC
--
if ISNINDEMPL = ISNMOREEMPL then
    EOFEMPL := TRUE ;
end if ;
if not(EOFEMPL) then
EOFEMPL := FALSE ;
CBEMPL.COMMAND_OPTION_2 := "N" ;
CBEMPL.COMMAND_OPTION_1 := " " ;
CBEMPL.COMMAND_CODE := "L1" ;
AEMPL.ADABAS (
    CBEMPL,FORMAT_BUFEMPL,
        EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
    ISN_BUFEMPL) ;
EMPLOYEES.RESPONSE_CODE :=
                                CBEMPL.RESPONSE_CODE ;
EMPLOYEES.QUANTITY :=
                                CBEMPL.ISN_QUANTITY ;
EMPLOYEES.ISN :=
                                CBEMPL.ISN ;
if CBEMPL.RESPONSE_CODE = 3 then
    EOFEMPL := TRUE ;
else
if CBEMPL.RESPONSE_CODE /= 0
then

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CSEQ := "00000000" ;
CLN1(01) := "          EXEC ADABAS          " ;
CLN2(01) := "          " ;
CLN1(02) := "          FETCH EMPL          " ;
CLN2(02) := "          " ;
CLN1(03) := "          END-EXEC          " ;
CLN2(03) := "          " ;
CLNNUM := 03 ;
  AEMPL.RESPF
    (CBEMPL,DDFILE,CSEQ,FORMAT_BUFEMPL,
     EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
     CLN1,CLN2,TRCE,CLNNUM) ;
  end if ;
end if ;
end if ;
if EOFEMPL then
  ADACODE := 003 ;
else
  ADACODE := 0 ;
end if ;

while ADACODE /= 3 loop
  PUT_LINE ( " " & EMPLOYEES.PERSONNEL_ID & " " & EMPLOYEES.NAME &
            " " & EMPLOYEES.FIRST_NAME & " " & EMPLOYEES.BIRTH & " "
            & EMPLOYEES.SEX ) ;

--
--      EXEC ADABAS
--      FETCH EMPL
--      END-EXEC
--

if ISNINDEMPL = ISNMOREEMPL then
  EOFEMPL := TRUE ;
end if ;
if not(EOFEMPL) then
  EOFEMPL := FALSE ;
  CBEMPL.COMMAND_OPTION_2 := "N" ;
  CBEMPL.COMMAND_OPTION_1 := " " ;
  CBEMPL.COMMAND_CODE := "L1" ;
  AEMPL.ADABAS (
    CBEMPL,FORMAT_BUFEMPL,
    EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
    ISN_BUFEMPL) ;
  EMPLOYEES.RESPONSE_CODE :=
    CBEMPL.RESPONSE_CODE ;
  EMPLOYEES.QUANTITY :=
    CBEMPL.ISN_QUANTITY ;
  EMPLOYEES.ISN :=
    CBEMPL.ISN ;
  if CBEMPL.RESPONSE_CODE = 3 then
    EOFEMPL := TRUE ;
  else
    if CBEMPL.RESPONSE_CODE /= 0
    then
      CSEQ := "00000000" ;
      CLN1(01) := "          EXEC ADABAS          " ;
      CLN2(01) := "          " ;
      CLN1(02) := "          FETCH EMPL          " ;
      CLN2(02) := "          " ;
      CLN1(03) := "          END-EXEC          " ;
      CLN2(03) := "          " ;

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    CLNNUM := 03 ;
    AEMPL.RESPF
      (CBEMPL,DDFILE,CSEQ,FORMAT_BUFEMPL,
        EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
        CLN1,CLN2,TRCE,CLNNUM) ;
    end if ;
  end if ;
end if ;
if EOFEMPL then
  ADACODE := 003 ;
else
  ADACODE := 0 ;
end if ;

end loop ;

--
--      EXEC ADABAS
--      CLOSE EMPL
--      END-EXEC
--
CBEMPL.COMMAND_OPTION_1 := "I" ;
CBEMPL.COMMAND_OPTION_2 := "S" ;
CBEMPL.COMMAND_CODE := "RC" ;
AEMPL.ADABAS (
  CBEMPL,FORMAT_BUFEMPL,
    EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
  ISN_BUFEMPL) ;
EMPLOYEES.RESPONSE_CODE :=
  CBEMPL.RESPONSE_CODE ;
EMPLOYEES.QUANTITY :=
  CBEMPL.ISN_QUANTITY ;
EMPLOYEES.ISN :=
  CBEMPL.ISN ;
if CBEMPL.RESPONSE_CODE /= 0
  then
    CSEQ := "00000000" ;
    CLN1(01) := "      EXEC ADABAS      " ;
    CLN2(01) := "      " ;
    CLN1(02) := "      CLOSE EMPL      " ;
    CLN2(02) := "      " ;
    CLN1(03) := "      END-EXEC      " ;
    CLN2(03) := "      " ;
    CLNNUM := 03 ;
    AEMPL.RESPF
      (CBEMPL,DDFILE,CSEQ,FORMAT_BUFEMPL,
        EMPLOYEES,SEARCH_BUFEMPL,VBEMPL,
        CLN1,CLN2,TRCE,CLNNUM) ;
    end if ;

--
--      EXEC ADABAS
--      DBCLOSE
--      END-EXEC
--
CB_OPN.RECORD_BUFFER_LENGTH := 1500 ;
CB_OPN.COMMAND_OPTION_2 := " " ;
CB_OPN.COMMAND_CODE := "CL" ;
A_OPN.ADABAS (
  CB_OPN,FORMAT_BUF_OPN,
    RB_OPN,SEARCH_BUF_OPN,VB_OPN,

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        ISN_BUF_OPN                                ) ;
    if CB_OPN.RESPONSE_CODE /= 0
    then
        CSEQ := "00000000" ;
        CLN1(01) := "          EXEC ADABAS          " ;
        CLN2(01) := "          " ;
        CLN1(02) := "          DBCLOSE          " ;
        CLN2(02) := "          " ;
        CLN1(03) := "          END-EXEC          " ;
        CLN2(03) := "          " ;
        CLNNUM := 03 ;
        A_OPN.RESPF
            (CB_OPN,DDFILE,CSEQ,FORMAT_BUF_OPN,
             RB_OPN                                     ,SEARCH_BUF_OPN,VB_OPN,
             CLN1,CLN2,TRCE,CLNNUM) ;
    end if ;
end AEX1 ;

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