

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

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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/AO,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 ;
ISNMOOREEMPL                   :  INTEGER ;
ISNINDEMPL                     :  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) ;
ISNINDEMPL := 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
CSEQ := "00000000" ;

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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) := "          " ;
        CLNNUM := 03 ;
        AEMPL.RESPF

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        (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,
    ISN_BUF_OPN
    ) ;
if CB_OPN.RESPONSE_CODE /= 0
then

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```
CSEQ := "00000000" ;
CLN1(01) := "          EXEC ADABAS          " ;
CLN2(01) := "          " ;
CLN1(02) := "          DEBCLOSE          " ;
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 ;
```