

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                      ;
ISNMOREEMPL             :  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 :=
EMPLOYEES.QUANTITY :=
EMPLOYEES.ISN :=
    CBEMPL.RESPONSE_CODE ;
    CBEMPL.ISN_QUANTITY ;
    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) := "          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 ;
```