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CSSQRTP: Procedure OPTIONS (MAIN) REORDER;                                0000000
/*****/
/* SAMPLE CALLABLE SERVICE PROGRAM. */
/* SHARE SESSION: INTRODUCING LE CALLABLE SERVICES */
/* THOMAS PETROLINO */
/* IBM LANGUAGE ENVIRONMENT */
/* tapetro@us.ibm.com */
/*****/

/*****/
/* Required include files for callable services */
/*****/
%INCLUDE CEEIBMAW;
%INCLUDE CEEIBMCT;

Declare SYSPRINT File Output Stream;

/*****/
/* Declare a Language Environment Feedback token. */
/* 12 Total bytes of storage. */
/*****/
Declare 01 LE_Feedback_Code,
    03 MsgSev          REAL FIXED BINARY(15,0),
    03 MsgNo           REAL FIXED BINARY(15,0),
    03 Flags,
        05 Case        BIT(2),
        05 Severity    BIT(3),
        05 Control     BIT(3),
    03 FacID           CHAR(3),
    03 ISI             REAL FIXED BINARY(31,0);

/*****/
/* Local declares needed for Math Callable Services. */
/*****/
Declare My_Input      REAL FLOAT DEC(6);
Declare My_Result     REAL FLOAT DEC(6);

/*****/
/* Local declares needed for Messaging Callable Services*/
/*****/
Declare Msg_dest      REAL FIXED BINARY(31,0);
Declare Msg_String    CHAR(255) VARYING;

/*****/
/* Local declares needed for CEE3DMP Callable Service */
/*****/
Declare My_Dump_Title CHAR(80);
Declare My_Dump_Options CHAR(255);

/*****/
/* Local declares needed for Date/Time Callable Services*/
/*****/
Declare My_Date_Lilian REAL FIXED BINARY(31,0);
Declare My_Secs_Lilian REAL FLOAT DECIMAL(16);
Declare My_Time_Gregorian CHARACTER ( 17 );
Declare My_Pic_String  CHAR(255) VARYING;
Declare My_Timestamp   CHAR(80);

Declare 01 Out_String,
    02 Out_String_Text1 CHAR(19),
    02 Out_String_Input PIC'ZZZ9V.99',
    02 Out_String_Text2 CHAR(5),
    02 Out_String_Result PIC'ZZZ9V.99';
Declare My_Out_String  CHAR(255) VARYING;
/*****/
/* Local declares needed for CEE3ABD */
/*****/
Declare Abend_code    REAL FIXED BINARY(31,0);

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Declare Timing                                REAL FIXED BINARY(31,0);

/*****
/* Start some real code now...                */
*****/

/*****
/* Set the message destination to 2 for CEEMOUT calls.  */
/* Set the dump title and options for CEE3DMP calls.    */
/* Set the Abend_code and timing for CEE3ABD calls.    */
*****/
Msg_dest = 2;
My_Dump_Title = 'Sample dump taken by CEE3DMP';
My_Dump_Options = 'NOCOND';
Out_String_Text1 = 'The square root of ';
Out_String_Text2 = ' is: ';
Abend_code = 1234;
Timing = 0;

/*****
/* Now call CEEOCT to get the local time as:          */
/*   Days since Oct 14, 1582.                        */
/*   Seconds since Oct 14, 1582                      */
/*   Time string of the form YYYYMMDDHHMISS999      */
/*   A feedback code                                 */
/* Report Error and stop if CEEOCT fails.           */
*****/
Call CEEOCT(My_Date_Lilian, My_Secs_Lilian,
            My_Time_Gregorian, LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****
/* Use CEEMSG to output a language env message      */
*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest, *);
/*****
/* Use CEE3DMP to produce CEEDUMP                   */
*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options, *);
Call CEE3ABD (Abend_code, Timing);
end;

/*****
/* Set up our picture string for CEEDATM call.      */
*****/
My_Pic_String = 'MM/DD/YYYY HH:MI:SS AP';

/*****
/* Now call CEEDATM.                                */
/*   Input: Lilian Seconds                          */
/*   Picture of how to format data                   */
/*   Returns: Input date/time as a formatted string */
/*   A feedback code                                 */
/* Report Error and stop if CEEDATM fails.         */
*****/
Call CEEDATM(My_Secs_Lilian, My_Pic_String,
            My_Timestamp, LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****
/* Use CEEMSG to output a language env message      */
*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest, *);
/*****
/* Use CEE3DMP to produce CEEDUMP                   */
*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options, *);
Call CEE3ABD (Abend_code, Timing);
end;

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/*****/
/* Move the timestamp to a msg string for CEEMOUT call */
/*****/
Msg_String = My_Timestamp;

/*****/
/* Now call CEEMOUT. */
/* Input: String to be output */
/* Message destination */
/* Returns: A feedback code */
/* Report Error and stop if CEEMOUT fails. */
/*****/
Call CEEMOUT(Msg_String, Msg_dest, LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****/
/* Use CEEMSG to output a language env message */
/*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);
end;

/*****/
/* Move the string to a msg string for CEEMOUT call. */
/*****/
Msg_String = 'IN MAIN PROGRAM!';

/*****/
/* Now call CEEMOUT. */
/* Input: String to be output */
/* Message destination */
/* Returns: A feedback code */
/* Report Error and stop if CEEMOUT fails. */
/*****/
Call CEEMOUT(Msg_String, Msg_dest, LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****/
/* Use CEEMSG to output a language env message */
/*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);
end;

/*****/
/* Setup to call CEESSTQT with 9 as input. */
/*****/
My_Input = 9.0;

/*****/
/* Now call CEESSTQT. */
/* Input: 9 */
/* Returns: A feedback code */
/* The result */
/* Report Error and stop if CEESSTQT fails. */
/*****/
Call CEESSTQT(My_Input, LE_Feedback_Code, My_Result);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****/
/* Use CEEMSG to output a language env message */
/*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);

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/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);
end;

/*****/
/* Output the result. */
/*****/
Out_String_Input = My_Input;
Out_String_Result = My_Result;
My_Out_String = STRING(Out_String);
Call CEEMOUT(My_Out_String,Msg_Dest,LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****/
/* Use CEEMSG to output a language env message */
/*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);
end;

/*****/
/* Setup to call CEESSTQT with 144 as input. */
/*****/
My_Input = 144.0;

/*****/
/* Now call CEESSTQT. */
/* Input: 144 */
/* Returns: A feedback code */
/* The result */
/* Report Error and stop if CEESSTQT fails. */
/*****/
Call CEESSTQT(My_Input, LE_Feedback_Code, My_Result);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****/
/* Use CEEMSG to output a language env message */
/*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);
end;

/*****/
/* Output the result. */
/*****/
Out_String_Input = My_Input;
Out_String_Result = My_Result;
My_Out_String = STRING(Out_String);
Call CEEMOUT(My_Out_String,Msg_Dest,LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****/
/* Use CEEMSG to output a language env message */
/*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);

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end;

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/* Setup to call CEESSTQT with 2500 as input. */
My_Input = 2500.0;
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/* Now call CEESSTQT.
   Input: 2500
   Returns: A feedback code
   The result
   Report Error and stop if CEESSTQT fails.
Call CEESSTQT(My_Input, LE_Feedback_Code, My_Result);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
   /* Use CEEMSG to output a language env message
   Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
   /* Use CEE3DMP to produce CEEDUMP
   Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
   Call CEE3ABD (Abend_code, Timing);
end;
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/* Output the result.
Out_String_Input = My_Input;
Out_String_Result = My_Result;
My_Out_String = STRING(Out_String);
Call CEEMOUT(My_Out_String,Msg_Dest,LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
   /* Use CEEMSG to output a language env message
   Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
   /* Use CEE3DMP to produce CEEDUMP
   Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
   Call CEE3ABD (Abend_code, Timing);
end;
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/* Setup to call CEESSTQT with -99 as input.
   We should expect to see an error on this call.
My_Input = -99.0;
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/* Now call CEESSTQT.
   Input: -99
   Returns: A feedback code
   The result
   Report Error and stop if CEESSTQT fails.
Call CEESSTQT(My_Input, LE_Feedback_Code, My_Result);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
   /* Use CEEMSG to output a language env message
   Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
   /* Use CEE3DMP to produce CEEDUMP
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    Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
    Call CEE3ABD (Abend_code, Timing);
end;

/*****
/* Output the result.
*****/
Out_String_Input = My_Input;
Out_String_Result = My_Result;
My_Out_String = STRING(Out_String);
Call CEEMOUT(My_Out_String,Msg_Dest,LE_Feedback_Code);
If ^ FBCHECK(LE_Feedback_Code, CEE000) Then Do;
/*****
/* Use CEEMSG to output a language env message
*****/
Call CEEMSG(LE_Feedback_Code, Msg_dest,*);
/*****
/* Use CEE3DMP to produce CEEDUMP
*****/
Call CEE3DMP(My_Dump_Title, My_Dump_Options,*);
Call CEE3ABD (Abend_code, Timing);
end;
/*****
/* We are outta here!
*****/

END CSSQRTP;
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