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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_Seconds_Lilian REAL FLOAT DECIMAL(16);
Declare My_Time_Gregorian CHARACTER ( 17 );
Declare My_Pic_String CHAR(255) VARYING;
Declare My_Timestamp CHAR(80);

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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);
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';

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/*****/
/* 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;

/*****/
/* 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 */
/*****/

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/* 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,*);
  /*****/
  /* 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 144 as input. */
My_Input = 144.0;
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```
/* Now call CEESSTQT. */
/* Input: 144 */
/* Returns: A feedback code */
/* The result */
/* Report Error and stop if CEESSTQT fails. */
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```
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. */
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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 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. */
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/*****/
Call CEESSTQ(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 CEESSTQ with -99 as input. */
/* We should expect to see an error on this call. */
/*****/
My_Input = -99.0;

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/*****/
/* Now call CEESSTQ. */
/* Input: -99 */
/* Returns: A feedback code */
/* The result */
/* Report Error and stop if CEESSTQ fails. */
/*****/
Call CEESSTQ(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);

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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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