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/*****/
/*  SAMPLE CALLABLE SERVICE PROGRAM.          */
/*  SHARE SESSION: INTRODUCING LE CALLABLE SERVICES  */
/*  THOMAS PETROLINO                          */
/*  IBM LANGUAGE ENVIRONMENT                  */
/*  tapetro@us.ibm.com                       */
/*****/
#include <stdio.h>
#include <leawi.h>
#include <ceedcct.h>

int main()
{
/*****/
/* Required include files for callable services  */
/*****/
    _FEEDBACK    fc;

/*****/
/* Local declares needed for Math Callable Services.  */
/*****/
    _FLOAT4      my_input, my_result;

/*****/
/* Local declares needed for Messaging Callable Services*/
/*****/
    _INT4        msg_dest = 2;
    _VSTRING     my_message;

/*****/
/* Local declares needed for CEE3DMP Callable Service  */
/*****/
    _CHAR80      dump_title = "Sample dump taken by CEE3DMP";
    _CHAR255     dump_options;
    #define      OPT_STRING "NOCOND"

/*****/
/* Local declares needed for Date/Time Callable Services*/
/*****/
    _INT4        my_lilian_date;
    _FLOAT8      my_lilian_secs;
    _CHAR17      my_gregorian_date;
    _VSTRING     my_date_pic;
    _CHAR80      my_timestamp;

/*****/
/* Local declares needed for CEE3ABD          */
/*****/
    _INT4        code = 1234;
    _INT4        timing = 0;

/*****/
/* Some local declares                          */
/*****/
    _CHAR80      my_temp_string;

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

/*****/
/* Set the dump title and options for CEE3DMP calls.  */
/*****/
    memset(dump_options, ' ', sizeof(dump_options));
    memcpy(dump_options, OPT_STRING, sizeof(OPT_STRING)-1);

/*****/
/* Now call CEEOCT to get the local time as:      */
/*****/

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/*      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. */
/*****/
CEEOCT(&my_lilian_date,&my_lilian_secs,
      my_gregorian_date,&fc);
if (_FBCHECK(fc,CEE000) != 0) {
  /*****/
  /* Use CEEMSG to output a language env message */
  /*****/
  CEEMSG(&fc,&msg_dest,NULL);
  /*****/
  /* Use CEE3DMP to produce CEEDUMP */
  /*****/
  CEE3DMP(dump_title,dump_options,NULL);
  CEE3ABD(&code,&timing);
}

/*****/
/* Set up our picture string for CEEDATM call. */
/*****/
strcpy(my_date_pic.string,"MM/DD/YYYY HH:MI:SS AP");
my_date_pic.length = strlen("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. */
/*****/
CEEDATM(&my_lilian_secs, &my_date_pic,
      my_timestamp, &fc);
if (_FBCHECK(fc,CEE000) != 0) {
  /*****/
  /* Use CEEMSG to output a language env message */
  /*****/
  CEEMSG(&fc,&msg_dest,NULL);
  /*****/
  /* Use CEE3DMP to produce CEEDUMP */
  /*****/
  CEE3DMP(dump_title,dump_options,NULL);
  CEE3ABD(&code,&timing);
}

/*****/
/* Move the timestamp to a msg string for CEEMOUT call */
/*****/
strcpy(my_message.string,my_timestamp);
my_message.length = strlen(my_timestamp);

/*****/
/* Now call CEEMOUT. */
/*      Input: String to be output */
/*      Message destination */
/*      Returns: A feedback code */
/* Report Error and stop if CEEMOUT fails. */
/*****/
CEEMOUT(&my_message,&msg_dest,&fc);
if (_FBCHECK(fc,CEE000) != 0) {
  /*****/
  /* Use CEEMSG to output a language env message */
  /*****/
  CEEMSG(&fc,&msg_dest,NULL);
  /*****/
}

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/* Use CEE3DMP to produce CEEDUMP          */
/*****/
CEE3DMP(dump_title,dump_options,NULL);
CEE3ABD(&code,&timing);
}

/*****/
/* Move the string to a msg string for CEEMOUT call. */
/*****/
strcpy(my_message.string,"In main program!");
my_message.length = strlen("In main program!");

/*****/
/* Now call CEEMOUT.          */
/*   Input: String to be output      */
/*   Message destination            */
/*   Returns: A feedback code       */
/* Report Error and stop if CEEMOUT fails. */
/*****/
CEEMOUT(&my_message,&msg_dest,&fc);
if (_FBCHECK(fc,CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
CEEMSG(&fc,&msg_dest,NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP          */
/*****/
CEE3DMP(dump_title,dump_options,NULL);
CEE3ABD(&code,&timing);
}

/*****/
/* 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. */
/*****/
CEESSTQT(&my_input, &fc, &my_result);
if (_FBCHECK(fc,CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
CEEMSG(&fc,&msg_dest,NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP          */
/*****/
CEE3DMP(dump_title,dump_options,NULL);
CEE3ABD(&code,&timing);
}

/*****/
/* Build output string for CEEMOUTM call */
/*****/
sprintf(my_temp_string,"The square root of %f is %f\n",
        my_input,my_result);
strcpy(my_message.string,my_temp_string);
my_message.length = strlen(my_temp_string);

/*****/
/* Now call CEEMOUT.          */
/*   Input: String to be output      */

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/*          Message destination          */
/* Returns: A feedback code             */
/* Report Error and stop if CEEMOUT fails. */
/*****/
CEEMOUT(&my_message, &msg_dest, &fc);
if (_FBCHECK(fc, CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
    CEEMSG(&fc, &msg_dest, NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
    CEE3DMP(dump_title, dump_options, NULL);
    CEE3ABD(&code, &timing);
}

/*****/
/* 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. */
/*****/
CEESSTQT(&my_input, &fc, &my_result);
if (_FBCHECK(fc, CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
    CEEMSG(&fc, &msg_dest, NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
    CEE3DMP(dump_title, dump_options, NULL);
    CEE3ABD(&code, &timing);
}

/*****/
/* Build output string for CEEMOUTM call */
/*****/
sprintf(my_temp_string, "The square root of %f is %f\n",
        my_input, my_result);
strcpy(my_message.string, my_temp_string);
my_message.length = strlen(my_temp_string);
/*****/
/* Now call CEEMOUT. */
/* Input: String to be output */
/* Message destination */
/* Returns: A feedback code */
/* Report Error and stop if CEEMOUT fails. */
/*****/
CEEMOUT(&my_message, &msg_dest, &fc);
if (_FBCHECK(fc, CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
    CEEMSG(&fc, &msg_dest, NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
    CEE3DMP(dump_title, dump_options, NULL);
    CEE3ABD(&code, &timing);
}

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/*****/
/* Setup to call CEESSTQT with 2500 as input. */
/*****/
my_input = 2500.0;

/*****/
/* Now call CEESSTQT. */
/* Input: 144 */
/* Returns: A feedback code */
/* The result */
/* Report Error and stop if CEESSTQT fails. */
/*****/
CEESSTQT(&my_input, &fc, &my_result);
if (_FBCHECK(fc,CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
CEEMSG(&fc,&msg_dest,NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
CEE3DMP(dump_title,dump_options,NULL);
CEE3ABD(&code,&timing);
}

/*****/
/* Build output string for CEEMOUTM call */
/*****/
sprintf(my_temp_string,"The square root of %f is %f\n",
my_input,my_result);
strcpy(my_message.string,my_temp_string);
my_message.length = strlen(my_temp_string);
/*****/
/* Now call CEEMOUT. */
/* Input: String to be output */
/* Message destination */
/* Returns: A feedback code */
/* Report Error and stop if CEEMOUT fails. */
/*****/
CEEMOUT(&my_message,&msg_dest,&fc);
if (_FBCHECK(fc,CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message */
/*****/
CEEMSG(&fc,&msg_dest,NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP */
/*****/
CEE3DMP(dump_title,dump_options,NULL);
CEE3ABD(&code,&timing);
}

/*****/
/* Setup to call CEESSTQT with -99 as input. */
/*****/
my_input = -99.0;

/*****/
/* Now call CEESSTQT. */
/* Input: 144 */
/* Returns: A feedback code */
/* The result */
/* Report Error and stop if CEESSTQT fails. */
/*****/
CEESSTQT(&my_input, &fc, &my_result);
if (_FBCHECK(fc,CEE000) != 0) {
/*****/

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/* Use CEEMSG to output a language env message      */
/*****/
CEEMSG(&fc, &msg_dest, NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP                  */
/*****/
CEE3DMP(dump_title, dump_options, NULL);
CEE3ABD(&code, &timing);
}

/*****/
/* Build output string for CEEMOUTM call          */
/*****/
sprintf(my_temp_string, "The square root of %f is %f\n",
        my_input, my_result);
strcpy(my_message.string, my_temp_string);
my_message.length = strlen(my_temp_string);
/*****/
/* Now call CEEMOUT.                               */
/*   Input: String to be output                    */
/*   Message destination                           */
/*   Returns: A feedback code                      */
/* Report Error and stop if CEEMOUT fails.        */
/*****/
CEEMOUT(&my_message, &msg_dest, &fc);
if (_FBCHECK(fc, CEE000) != 0) {
/*****/
/* Use CEEMSG to output a language env message    */
/*****/
CEEMSG(&fc, &msg_dest, NULL);
/*****/
/* Use CEE3DMP to produce CEEDUMP                  */
/*****/
CEE3DMP(dump_title, dump_options, NULL);
CEE3ABD(&code, &timing);
}

/*****/
/* We are outta here!                             */
/*****/
return(0);
}
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