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/**********************************
*HOMEWORK 7 Question 3
*Master program that takes the arguments
/to find x1 and x2 of a quadratic equation
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#include<iostream>
#include<fstream>
#include<math.h>
using namespace std;

// This program returns a concatenated string a+b
// stored in a static buffer hidden inside the program
char *AddStr(char *a, char *b, char *c) // return a+b+c
{    static char buffer[50];
     char *p = buffer;
     while(*p++ = *a++);  // copy
     p--;
     while(*p++ = *b++);  // append
     p--;
     while(*p++ = *c++);  // append
     return buffer;
}

int main(void)   //  MASTER PROGRAM
{
   double x1, x2, a, b, c, rootDelta, delta;
   char  *infile    = "EngineInput.dat ",  // Input API file
         *outfile   = "EngineOutput.dat ", // Output API file
         *engine    = "16.4.ENGINE2 ";     // Engine program name

  //reads data from the use.
  cout<<"Enter a b and c: ";//componenets of quadratic equation
  cin>>a>>b>>c;

   // Prepare the input file file
   ofstream OS(infile, ios::out);
   OS<<a<<" "<<b<<" "<<c;//store the data to EngineInput.dat
   OS.close();
                                          // Create command in a
hidden
   system(AddStr(engine, infile, outfile));// buffer and execute

   ifstream IS(outfile, ios::in);         // Open file with results
   IS >> x1 >> x2;                     // Read results of quadratic
equation
   IS.close();

   cout << "\nx1     = " << x1           // Show results
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        << "\nx2     = " << x2 << "\n\n";

   system("pause");
   return 0;
}



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#include<iostream>
#include<fstream>
#include<math.h>
using namespace std;

int main(int argcnt, char *argvec[])//engine program
{
   double x1, x2, a, b, c, rootDelta, delta;//variables of equation

                //=================
   if (argcnt<2) // No commang line arguments.(user prompt)
   {            //=================
     //reads data from the user
     cout<<"Enter a b and c: ";
      //finds x1 and x2
      //by using quadratic formula
      delta= pow(b, 2.0)-(4*a*c);
      delta = sqrt(delta);
      b *= -1;
      x1 = (b + delta)/(2*a);
      x2 = (b - delta)/(2*a);

     cout << "\nx1     = " << x1
          << "\nx2 = " << x2 << "\n\n";
     system("pause");
     return 0;
   }
          //=============================================
   else    // command line arguments. program displays the results.
   {       //=============================================
     ifstream IS(argvec[1], ios::in); // Open the input file
     IS>>a>>b>>c;                    // Read arguments
      //calculate x1 and x2
      delta= pow(b, 2.0)-(4*a*c);
      delta = sqrt(delta);
      b *= -1;
      x1 = (b + delta)/(2*a);
      x2 = (b - delta)/(2*a);
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     ofstream OS(argvec[2], ios::out);  // Deliver results
     OS << x1 << "  " << x2 << endl;
     OS.close();
     return 0;
   }
}

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Enter a b and c: 12
34
56
'16.4.ENGINE2' is not recognized as an internal or external command,
operable program or batch file.

x1     = 1.6978e-313
x2     = 1.68097e-307

Press any key to continue . . .
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