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//
// CS75301 System Modeling and Performance Eval
//
// File:      sin_cos.cpp
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// Abstract:  This program generates a data file with x ranging from
//            -2pi to 2pi as inputs to sin and cos functions to produce
//            y and z respectively. Output is written to a file "sin_cos.txt"
//            with this format: x, space, y, space, z, newline
//
// Revision History:  Date           Who           Description
//                   -----
//                   12/7/03        KWS         Initial Release

#include <fstream.h> //to write to a file
#include <math.h>

ofstream writeFile; // to write to a file

int main()//build a list of values in triplets x=-2pi to 2pi, y=sin x, z=cos x
{
    double x = 0.;
    double y = 0.;
    double z = 0.;

    writeFile.open ("sin_cos.txt", ios::out); //to overwrite to a file

    if (!writeFile)
    {
        cout << "can't open the file to be written to" << endl;
        return 1;
    }

    for ( x = -6.3; x < 6.3; x += 0.1 )
    {
        y = sin ( x );
        z = cos ( x );
        writeFile << x << " " << y << " " << z << endl;
    }

    writeFile.close (); //to close the writeFile

    return 0;
}

```