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// AveStn.cpp : Defines the entry point for the console application.
//

#include "stdafx.h"
#include <iostream>
#include <fstream>
#include <string>
#include <iomanip>
#include "PointF.h"
int _tmain(int argc, _TCHAR* argv[])
{
    using namespace std;
    string str;
    size_t i,m,nOrder;
    double x,x1,x2,y;
    double gl,dy;
    double thk;

    // Create the class
    PointF Kf;

    cout << "Output file name: ";
    cin >> str;
    ofstream ofile(str.c_str());
    if(!ofile)
    {
        cerr << "Can't open input file \"" << str << "\" " << endl;
        exit(EXIT_FAILURE);
    }
    cout << "Number of data to be computed = ";
    cin >> m;
    cout << "Starting and ending points on plane of cut = ";
    cin >> x1 >> x2;
    cout << "Highest order of computation = ";
    cin >> nOrder;
    cout << "Thickness = ";
    cin >> thk;
    cout << "Gage length = ";
    cin >> gl;
    cout << "Gage position offset = ";
    cin >> dy;
    if(dy>=gl/2)
    {
        cout << "Error: The whole strain gage is off the centerline." << endl;
        exit(EXIT_FAILURE);
    }
    // Compute the values of f^f(a,s)
    Kf.SetGPos(gl/thk,dy/thk);
    for(i=0;i<=m;i++)
    {
        x = x1+(x2-x1)*i/m;
        ofile << std::fixed << x;
        for(size_t j=0;j<=nOrder;j++)
        {
            Kf.SetOrdern(int(j));
            y = Kf.AveStn(x);
            ofile << '\t' << std::scientific << std::setprecision(10) << y ;
        }
        ofile << endl;
    }
    cout << "Completed." << endl;
    return 0;
}

```