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// Name: James Small
// Program: 4a
// Class: CSE455
// Description: Class to calculate the linear regression of a set of numbers

#ifndef LINEARREGRESSION_H
#define LINEARREGRESSION_H

#include <string>
#include <vector>
#include "FileCheck.h"

using namespace std;

class LinearRegression
{
    public:
        LinearRegression();
        bool getGood();
        void report();

    private:
        float b0Value;
        float b1Value;
        float variance;
        float range70;
        float range90;
        float xk;
        float t90;
        float t70;
        float yk;
        float upi90;
        float lpi90;
        float upi70;
        float lpi70;
        bool fileNamesGood;
        string fileName1;
        string fileName2;
        FileCheck fileCheck;
        vector<float> vector1;
        vector<float> vector2;
        void calculate();
        void readInValues(string fileName, vector<float> &vector);
        float averageOfVector(vector<float> vector);
        vector<float> multiplyValues(vector<float> vector1, vector<float> vector2
            );
        float sumValues(vector<float> vector);
        bool enterNewFileName(string &fileName);
        void varianceCalculate();
        void rangeCalculate();
        void calculateUpperLower();
};
#endif
```