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//CS372

//Statistician

#include <iostream>

#include <iomanip>

#include <cstdlib>

using namespace std;

class statistic

{

private:

float sum = 0.0;

int length = 0;

float largest = 0.0;

float smallest = 0.0;

public:

//Methods

void initstat(float val);

void add(float val);

int getlength();

float getsum();

float getaverage();

float getlargest();

float getsmallest();

void emptystat();

};

//Method Details

void statistic::initstat(float val)

{

sum = val;

length = 1;

largest = val;

smallest = val;

}

void statistic::add(float val)

{

sum = sum + val;

length++;

if(smallest > val)

smallest = val;

if(largest < val)

largest = val;

}

int statistic::getlength()

{

return length;

}

float statistic::getsum()

{

return sum;

}

float statistic::getaverage()

{

if(length > 0)

return (sum / length);

else

return 0.0;

}

float statistic::getlargest()

{

return largest;

}

float statistic::getsmallest()

{

return smallest;

}

void statistic::emptystat()

{

sum = 0.0;

length = 0.0;

largest = 0.0;

smallest = 0.0;

}

int main()

{

//Stat 1

statistic statistician1;

statistician1.initstat(5.5);

statistician1.add(6.6);

statistician1.add(8.8);

statistician1.add(-3.4);

statistician1.add(-0.5);

statistician1.add(4.7);

statistician1.add(9.1);

//Print 1

cout << " Statistician 1 " << endl;

cout << "Sum = " << statistician1.getsum() << endl;

cout << "Length = " << statistician1.getlength() << endl;

cout << "Average = " << statistician1.getaverage() << endl;

cout << endl;

statistician1.add(5.2);

statistician1.add(-3.3);

statistician1.add(-8.5);

statistician1.add(3.2);

statistician1.add(5.5);

//Print 2

cout << "Average = " << statistician1.getaverage() << endl;

cout << "Smallest = " << statistician1.getsmallest() << endl;

cout << "Largest = " << statistician1.getlargest() << endl;

cout << endl;

//Stat 2

statistic statistician2;

//Print 3

cout << " Empty " << endl;

cout << "Sum = " << statistician2.getsum() << endl;

cout << "Length = " << statistician2.getlength() << endl;

cout << "Average = " << statistician2.getaverage() << endl;

cout << endl;

statistician2.initstat(103);

statistician2.add(821);

statistician2.add(871);

statistician2.add(487);

statistician2.add(312);

statistician2.add(245);

statistician2.add(224);

statistician2.add(623);

statistician2.add(424);

statistician2.add(432);

//Print 4

cout << " Statistician 2 " << endl;

cout << "Sum = " << statistician2.getsum() << endl;

cout << "Length = " << statistician2.getlength() << endl;

cout << "Average = " << statistician2.getaverage() << endl;

cout << endl;

statistician2.emptystat();

//Print 5

cout << " Empty " << endl;

cout << "Sum = " << statistician2.getsum() << endl;

cout << "Length = " << statistician2.getlength() << endl;

cout << "Average = " << statistician2.getaverage() << endl;

cout << "Smallest = " << statistician2.getsmallest() << endl;

cout << "Largest = " << statistician2.getlargest() << endl;

cout << endl;

statistician2.initstat(9.3);

statistician2.add(-6.3);

statistician2.add(8.2);

statistician2.add(7.2);

statistician2.add(8.2);

statistician2.add(8.8);

statistician2.add(7.2);

statistician2.add(-3.2);

statistician2.add(7.6);

statistician2.add(9.3);

//Print 6

cout << " Statistician 2 " << endl;

cout << "Sum = " << statistician2.getsum() << endl;

cout << "Length = " << statistician2.getlength() << endl;

cout << "Average = " << statistician2.getaverage() << endl;

cout << "Smallest = " << statistician2.getsmallest() << endl;

cout << "Largest = " << statistician2.getlargest() << endl;

cout << endl;

return 0;

}

