**CSE 330 Homework 1 Report**

Daniel Meyer

Data Structures

Fall 2017

**Status:** 100%

**Time Complexity:** O(n)

**Storage Complexity:** O(1)

**Source Code:**

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*Daniel Meyer

\*variance.cpp

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#include <iostream>

#include <math.h>

using namespace std;

float average(float float\_array[], int size);

float variance(float float\_array[], int size);

int main()

{

float float\_array[100];

int size = 0;

while (!cin.eof())

{

cin >> float\_array[size];

size++;

}

if (size > 0 && size < 100)

cout << variance(float\_array, size);

cout << endl;

return 0;

}

float average(float float\_array[], int size)

{

float sum = 0;

for (int i = 0; i < size; i++) {

sum += float\_array[i];

}

return sum / size;

}

float variance(float float\_array[], int size)

{

float sum = 0;

float variance;

float avg = average(float\_array, size);

for (int i = 0; i < size; i++) {

sum += pow((float\_array[i] - avg), 2.0);

}

return variance = sum / (size - 1);

}

**Sample Run:**

Script started on Fri 06 Oct 2017 10:44:12 AM PDT

To run a command as administrator (user "root"), use "sudo <command>".

See "man sudo\_root" for details.

]0;daniel@Daniel-Ubuntu-Laptop: ~/Desktop[01;32mdaniel@Daniel-Ubuntu-Laptop[00m:[01;34m~/Desktop[00m$ ./a.out

10

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350

]0;daniel@Daniel-Ubuntu-Laptop: ~/Desktop[01;32mdaniel@Daniel-Ubuntu-Laptop[00m:[01;34m~/Desktop[00m$ exit

Script done on Fri 06 Oct 2017 10:45:29 AM PDT