

CS 100 Lab Six – Spring 2019

Create a directory called **lab6** on your machine using **mkdir lab6** and move into that directory with **cd lab6**. Complete the following programs. Please note, for this lab, you shall not modify the signatures of the functions to be implemented. You shall not use **[]** (subscript notation) in the functions to be implemented. You shall not modify the main function. **A heavy penalty will be assessed for not following the above instructions.**

1. Name this program **shift.c** – You can download the starting **shift.c** from Blackboard. The program first reads in three integers from standard input. It then calls a function, named **shift**, that takes these three integers, and shifts the first integer to the second, the second to the third and the third back to the first. The **shift** function will be called twice, and the results will be printed after each shift. Your job is to implement the **shift** function. The following is a sample execution of the program.

Enter any three integers: 10 24 26

The results after one shift: 26 10 24

The results after another shift: 24 26 10

2. Name this program **reverse.c** – You can download the starting **reverse.c** from Blackboard. The program reads in a string from standard input. It then calls a function named **reverse** to reverse the input string. You need to implement the **reverse** function. The following are two sample executions of the program.

Enter a string: CRIMSON

The reverse of your input string is "NOSMIRC"

Enter a string: TIDE

The reverse of your input string is "EDIT"

3. Name this program **stat.c** – You can download the starting **stat.c** from Blackboard. The program:
 - Reads in the array size
 - Calls **getArray** to get an array of that many integers
 - Calls **calcMean** to calculate the mean of the array
 - Calls **calcStdDev** to calculate the standard deviation
 - Prints the mean and the standard deviation

You are asked to implement the **getArray**, **calcMean** and **calcStdDev** functions. The following is a sample execution of the program.

Enter a positive integer for array size: 5

Enter 5 integers:

600 470 170 430 300

Mean is 394

Standard deviation is 147.323

Please see <https://www.mathsisfun.com/data/standard-deviation.html> for the math involved.

Submit your lab

First, on your machine, compress your **lab6** directory into a single (compressed) file, i.e. **lab6.zip**.

Second, once you have a compressed file named **lab6.zip**, submit that file to Blackboard.