Lab Activity #2 – Input and Output

It’s time to begin programming in C++. For each of the following activities, submit both the source code and output through Blackboard.

Exercise #1:

Write a C++ program that prints out the following menu for a game (include the line of asterisks (*) on top and bottom):

***************************************************
Welcome!
Please choose a number from the following options:
1. Play the game!
2. Demo the game!
3. Exit
****************************************

Now modify your program so that instead of simply having the message Welcome!, have the welcome message use the user’s name. Prompt the user for a name and then have a personalized welcome message. If the user inputs the name Sue, the welcome message might say, Welcome, Sue!

Exercise #2:

Write a C++ program that will calculate the average of four numbers that are stored in variables. The variables are all of the data type: double. The numbers are 578, 986, 1066, and 714.

Display a message showing the sum of all four numbers
(ex. The sum of those numbers is ___.")

On the next line, display the average of all four numbers
(ex. “The average of those numbers is ___.”)

Exercise #3:
Write a C++ program that calculates the average of four numbers – just like in the previous exercise – but this time *ask the user to enter which four numbers to calculate*. You will have to use the `cin` command to get all four numbers from the user.

**Sample Output:**

Enter the first number:  (number1)
Enter the second number:  (number2)
Enter the third number:  (number3)
Enter the fourth number:  (number4)

The average of these numbers is:  (average)

**Exercise #4:**

Write a C++ program that will calculate how much of a profit an investor will make. You will need to get the following input:

- the number of shares they purchased
- the price of the stock (per share) when they purchased it
- the price of the stock (per share) now

The formula to use:

Profit = (# of shares * Current Price) – (# of shares * Purchase Price)

Output this message to the screen:

You have made a profit of $_____ dollars since you bought _____ shares of this stock.

Also, you must display the dollar amount formatted to two decimal places.

**Exercise #5:**

Use strings and user input to create a Madlib program. Ask the user to enter nouns, verbs, adjectives, etc., and generate a cohesive story that you will write as output.

For examples of Madlibs and how they work, check out: [https://stuff.mit.edu/storyfun](https://stuff.mit.edu/storyfun)