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 screenshot through Blackboard.

**Exercise #1:**

Write a C++ program that prints out the following menu for a game:

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

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. 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 amount of shares they purchased, the price of the stock when they purchased it, and the price of the stock now.

The formula to use:  Profit = (# of shares * Current Price) – (# of shares * Purchase Price)

Output to the screen this message:  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