Lab Activity #1 – 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. Your lab professor will show you how to submit your homework, and will be the one grading your homework.

Exercise #1:
Write a C++ program that prints out the following menu for a game (include the line of asterisks (*) on top and bottom):

***************************************************
<table>
<thead>
<tr>
<th>Welcome!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please choose a number from the following options:</td>
</tr>
<tr>
<td>1. Play the game!</td>
</tr>
<tr>
<td>2. Demo the game!</td>
</tr>
<tr>
<td>3. Exit</td>
</tr>
</tbody>
</table>

***************************************************

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. Place this statement at the start of your program:

```cpp
cout << fixed << setprecision(2);
```

**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)