***Homework Lab 1: Input/Output and Variables***

NOTE THAT THIS LAB HAS THREE PARTS. You should attach THREE .cpp files for this assignment. Make sure to give your files names that are appropriate. For each of the exercises, submit both the **source code** and **output** through Blackboard. It is best to copy the output to the bottom of the source code.

***Exercise 1***

Write a C++ program that will calculate how much of a profit an investor will make. You will need to ask the user for the following three inputs:

* the **number of shares** the investor purchased
* the **price** of the stock (per share) when the investor **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.

Include the header file at the top of your code (after #include<iostream> )

#include<iomanip>

Place this statement at the start of your program (after int main() {):

cout << fixed << setprecision(2);

***Exercise 2***

Write code that will play the computer game that is explained below.

Go to <http://www.cs.csi.cuny.edu/~zelikovi/csc126/mathtrick.exe> to see an example of how this math game will look when we play it.

How did that work? Here is the trick:

After the user gives the first five digit number, subtract 2 from the number, and place a 2 in front of the number. This is the final sum.

Each other time that the user gives a full five digit number (no leading zeros), have the computer give a number as follows: compute the difference of each digit of the user’s number with 9, and that is the number you will give. For example, if the user gives the number 12121, your number will be 87878 (so that when your number and the user’s number is added, the sum will be 99999).

The total sum at the end will be 99999 + 99999 (which is 199998, which is 2 less than 200,000, for the four numbers) + the first number that the user chose!

***Exercises 3***

Use strings and user input to create a MADLIBS program. Ask the user to enter nouns, verbs, adjectives, etc., and generate a cohesive story that you will write as output. Your cout statements should be a combination of the variables that the user input and a story line.

For examples of MADLIBS and how they work, check out: <https://stuff.mit.edu/storyfun>