

50 pts

Name1: _____

Name2: _____

Class Day / Time: _____

Due Date: _____

Lab 6: Intro to Programming

For this lab you will work with a partner. There should be 1 computer for every two people **ONE PARTNER SHOULD BE TYPING WHILE THE OTHER IS WATCHING FOR ERRORS.** There should be two names at the top of this sheet one for you and one for your partner. If you can't find a partner please let me know and I'll find someone to work with you.

PART 1 - (10 points)

Create a new project. Type in the following code segment (this is the same one discussed in class). **DO NOT CUT AND PASTE & DO NOT WRITE OVER AN OLD PROJECT.**

Make sure you type the code EXACTLY as it appears here. Only include comments in **bold**.

```

// preprocessor directives for I/O
#include <iostream>
#include <iomanip>
// Tells the compiler to include all standard C++
using namespace std;

// PROG DESC: This program adds two integers and outputs the result
int main( )
{
    int firstNum;           // firstNum is the 1st input from the use --> INPUT
    int secondNum;         // secondNum is the 2nd input from the user -->INPUT
    int sum;                // sum of 2 integers input --> CALC & OUTPUT

    // INPUT - reads in two inputs from the user (firstNum & secondNum)
    // Prompts the user for the first input then reads the input
    cout << "Enter the first integer: ";
    cin >> firstNum;

    // Prompts the user for the second input then reads the input
    cout << "Enter the second integer: ";
    cin >> secondNum;

    // PROCESSING - Calculates the sum of the two inputs
    sum = firstNum + secondNum;

    // OUTPUT - Outputs the inputs and the sum as specified
    cout << endl << firstNum << " + " << secondNum << " = " << sum << endl;

    return 0;
}

```

Run the code provided 3 times to produce the following output (it should look exactly as follows → note: there is a space between the numbers and the operators).

EXPECTED INPUT (in green) / OUTPUT (in blue) – for PART 1

Enter the first integer: 32

Enter the second integer: 41

32 + 41 = 73

Enter the first integer: 24

Enter the second integer: 1258

24 + 1258 = 1282

Enter the first integer: 34

Enter the second integer: 563

34 + 563 = 597

PART 2 - (40 points)

Discuss the HIPO chart (including the input, output and processing variables necessary) and the pseudocode. Now you will **switch “seats”** with your partner. Whoever was watching before will now be typing the source code and the other will be checking for errors. Create a **new project** that modifies to program above to also average the two numbers.

- Write the HIPO Chart (can be written neatly by hand or typed)
- Write the pseudocode (can be written neatly by hand or typed)
- Rewrite the code

Use the example in the lecture notes to format the floating point number.

TO FORMAT THE FLOATING POINT NUMBER PROPERLY, USE THE FOLLOWING Line

```
cout << fixed << setprecision(2); // this line must come before the cout for average
```

Make sure when you divide to get the average DO NOT DIVIDE BY 2 → you must divide by 2.0

EXPECTED INPUT (in green) / OUTPUT (in blue) FOR PART 2

Enter the first integer: 32

Enter the second integer: 41

32 + 41 = 73

The average is: 36.50

Enter the first integer: 24

Enter the second integer: 1258

24 + 1258 = 1282

The average is: 641.00

Enter the first integer: 34

Enter the second integer: 563

34 + 563 = 597

The average is: 298.50

TURN IN

- 1 - Turn in the FIRST PAGE of this lab as a cover sheet.
- 2 – output from part 1
- 3 – source code from part 1
- 3 – HIPO chart from part 2 – include a list of input, output and processing variables
- 4 – pseudocode from part 2
- 5 – output from part 2
- 6 – source code from part 2

Be sure to start each problem on a new page, and staple your work.