**ITCS 1212L**

**Post-Lab 1**

**From Source Code to Executable and Algorithms**

1. **Answer these questions based on what you leant in lab lesson and lab practices:**
2. What is the name of the compiler we are using in the lab? **Code Blocks**
3. What is the name of the IDE (Integrated Development Environment) we are using in the lab? **Code Blocks**
4. What is the extension of source code file you type in the editor? **.cpp**
5. What is the extension of the file the compiler produces? **.obj**
6. What are the 2 task of the C++ compiler? **Catch Syntax errors and translate our C++ HHL into machine code/bianary in the form of an executable.**
7. What is the extension of the file that the liker program produces? **.exe**
8. What is meant by the phrase “syntax error”? **For lack of a better phrase, a “grammatical error” in the code. Something that does not fit the pre-defined and accepted coding instructions set for the HHL.**
9. What is meant by the phrase “logic error”? **An error of logic. The program will compile and run with no Syntax errors, but the program will not produce the results you desired or were expecting because the program is executing exactly what you told it to do. Recheck your work and process to make sure your program’s logic is sound.**
10. Looking at the sample code you wrote in lab, what type of statement did you use to read input from the user? **cin >> userInputHere;**
11. What type of statement did you use to produce output on the screen? **Cout << “Displaying a statement like this and it’s friendly number “ << someVariableWithValue;**
12. When you submit your source code to Moodle to be graded, what is the extension of the file you will submit? **.cpp**
    1. Write an algorithm that gets 3 inputs A, B and C from user, calculates the following formula and prints the result on screen.
       1. D = (A + B)/(C – 2)

#include <iostream>

using namespace std;

int main()

{

//Declaring variables

int alpha, bravo, charlie, delta;

//Obtain user input

cout << endl << “Please enter the value for A:”;

cin >> alpha;

cout << endl << “Please enter the value for B:”;

cin >> bravo;

cout << endl << “Please enter the value for C:”;

cin >> Charlie;

//Process the input with the formula given

delta = (alpha + bravo) / (Charlie – 2);

//Output the process data in a meaningful way to the user

cout << endl << endl << “Given the values you’ve provided, the equation (A + B)/(C – 2) = “ << delta << endl;

return 0;

}

* 1. The following program is supposed to calculate half of the number that user chooses as input. Inspect the code and identify the errors in addition also fix the error.

#include <iostream>

using namespace std;

int main()

{

int number;

int divider = 2;

cout << endl << "Let's start off by typing a number of your choice" << endl;

cin >> number;

number = number / divider;

cout << number << " is half the number you typed" << endl;

return 0;

}

4. This program takes two values from the user and then swaps them. Before printing the values. The user will be prompted to enter both numbers.

a) Inspect the program. What is (was) printed?

**The program skips the first cout because its on the same line as the //**

**The user will see:**

**Then hit enter**

**? (user enters a number and presumably hits enter)**

**(Again, a cout statement is not read due to the // symbol)**

**Then hit enter**

**? (user again enters a number and hits enter)**

**(This time the cout statement is on a different line from the //, so I will include it in my “display” here)**

**“You input the numbers as (firstNumber) and (secondNumber)**

**“After swapping, the value of the two number are (secondNumber) and (secondNumber)**

**Process returned 0 <0x0> execution time : (however long) s**

**Press any key to continue.**

**------------------------------------------**

b) Identify the error in the program and correct it.

int main()

{

float firstNumber;

float secondNumber;

float placeholder;

// Prompt user to enter the first number.

cout << "Enter the first number" << endl;

cout << "Then hit enter" << endl;

cin >> firstNumber;

// Prompt user to enter the second number.

cout << "Enter the second number" << endl;

cout << "Then hit enter" << endl;

cin >> secondNumber;

// Echo print the input.

cout << endl << "You input the numbers as " << firstNumber

<< " and " << secondNumber << endl;

// Now we will swap the values.

placeHolder = secondNumber;

secondNumber = firstNumber;

firstNumber = placeholder;

// Output the values.

cout << "After swapping, the values of the two numbers are "

<< firstNumber << " and " << secondNumber << endl;

return 0;

}

5.Write a program that will read in a number that represents the number of kilometers traveled. The output will convert this number to miles. 1 kilometer = 0.621 miles.

The following shows the algorithms to write the program:

1. Get the number of kilometers as input.
2. Multiply the kilometer numbers to 0.621.
3. Print the result on the screen

#include <iostream>

using namespace std;

int main()

{

//Delcare variables

float kilometers, miles;

//Ask for input

cout << endl << “Please enter the number of kilometers traveled:” << endl;

cin >> kilometers;

//Process/calculate

miles = kilometers \* .621;

//Display the result

cout << endl << endl << “You traveled “ << miles << “ miles!” << endl;

return 0;

}