

COMP315 Practical 1 - 17 February 2023

Instructions

- Log on to your PC and attempt the following exercises.
- You are expected to submit Question 3 and Question 4, the link will be made available during the time of the practical.
- Please consult with the lecturer or demonstrators if you require assistance.

Objectives

- Introduction to C++ programming, compiling and executing programs.
- Use of C++ functions, basic file streams.

Question 1

Copy the following hello world program and run it in your preferred IDE or on the command line.

```
#include <iostream>
using namespace std;
int main(){
    cout<<"Hello World"<<endl;
}
```

Question 2

Modify the following program so that it uses the greet() function to greet the user by name instead of all the code being in the main() function.

```
#include <iostream>
#include <string>
using namespace std;
void greet(string name){ }
int main(){
    string name;
    cout<<"What is your name?"<<endl;
    cin>>name;
    cout<<"Hello " <<name<<endl;
}
```

Question 3

Write a C++ program that will be used to calculate simple arithmetic expressions. The program will accept user input that consists of 3 tokens, a number, a binary operator and another number. The 3 tokens represent a simple arithmetic expression whose value is to be calculated. The program should display the expression as well as its value. The user should be prompted for more expressions until an input of 0 is received in place of a full arithmetic expression. Assume the user will not supply an expression with a first operand equal to 0. Sample output is shown Below. Only submit the *.cpp file.

```

Please enter arithmetic expressions for evaluation as follows:
Each token should be separated by a space.
Press enter after entering a complete expression.
Type 0 then press enter to exit.
>> 2 + 3
2 + 3 = 5
>> 11 - 7
11 - 7 = 4
>> 0
----jGRASP: operation complete.
```

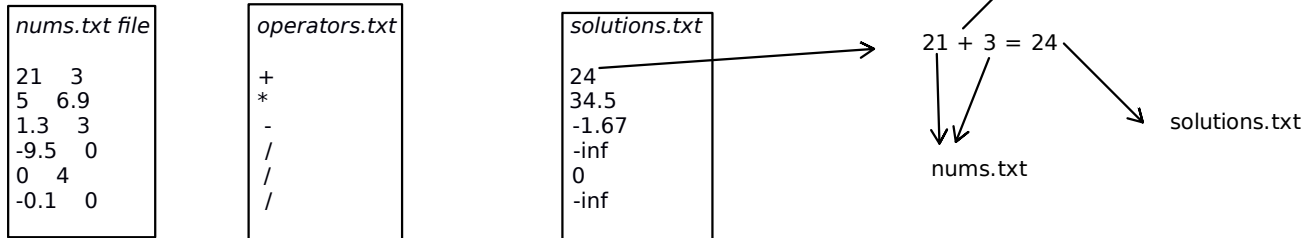
Hints

- Use while loop, cout, cin, if statement and practise defining functions. Note that the insert and extract operators in cout and cin respectively are overloaded to handle various data types.

Question 4

Download the *arithmetic* folder on the course website, it contains two text files. The *nums.txt* file contains a pair of numbers per row, separated by four white spaces. The *operators.txt* file contains operators, one operator per record. The records of *nums.txt* and *operators.txt* are equal. Write a C++ program that will read two numbers from *nums.txt* and read an operator in the corresponding record in *operators.txt* then compute the result and save its in *solutions.txt*. Your program should output "done" on the console once all the arithmetic operations are complete. You are advised to define functions that will work together in accomplishing the task. Only submit the *.cpp file.

Example *nums.txt*, *operators.txt* file and *solutions.txt* file's contents.



The first line of your solution file should contain your fullname and student number in the following format:

```
/*
@author: name surname (student no.)
*/
```

Once you are done, zip your code in folder named with your student number and use the *.zip extension only. Please use meaningful names for functions and variables. Add brief comments where necessary.

Good luck!