Laboratory Assignment #4 — An introduction to C++

Due: at 5:00 pm on 2/22

Outcomes

After successfully completing this assignment, you should be able to:

- Write and compile a simple program in C++
- List key similarities and differences between C and C++

Background Information

C++ is based on C with many similar syntax. We still manage memory using the stack and the heap, but using different keywords. In this lab, you will interpret code written in C++ and write a simple program using functions in C++.

Review Modern C++ for Absolute Beginners chapter 4 and 8 for an overview of `std::cout` and `std::cin`

https://learning.oreilly.com/library/view/modern-c-for/9781484260470/

Part 1: Interpreting C++

Download the following files from the Lab 4 folder:

`calculateInC.c`

`calculateInCpp.cpp`

The file, `calculateInC.c` is a short program that calculates the average of 3 user input values and prints it to the screen. It is written in C and should be easy to read and understand.

The file, `calculateInCpp.cpp` is the same program, but written in C++. The file name .cpp is for any source code written in C++ (pp stands for ++).

You can compile `calculateInCpp.cpp` using the following command:

```
g++ -Wall calculateInCpp.cpp
```

By comparing the two files, you should be able to pull out some key similarities and differences between the two languages. For each item in the table below, mark it as the same or different between the languages. If the implementation is different, write the C++ implementation.

Item	Same or different?	C++ implementation
Library for accessing the terminal		
Declaring variables		
Printing to the terminal		
Reading from the terminal		
Function prototypes		
Function definition		

Review Modern C++ for Absolute Beginners chapter 4 and 8 for an overview of `std::cout` and `std::cin`

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Part 2: Implementing C++

Download `prime_number.c` from the Lab 4 folder. Rewrite this program to be in C++ instead of C and save it as `prime_number.cpp`

Getting credit for this Lab

To earn credit for this lab, Submit `prime_number.cpp` to *Canvas* under the assignment *Lab4*.

Grading:

Submission of prime_number.cpp	70 pts
Correctly identifies a prime number	5 pts
Lab attendance	25 pts