

LAB #01: Introduction

Lab Objective:

Introduction to programming

Lab Description:

C++ Program Structure

Let us look at a simple code that would print the words *Hello World*.

```
#include <iostream>

using namespace std;

// main() is where program execution begins.
int main() {
    cout << "Hello World"; // prints Hello World

    return 0;
}
```

Let us look at the various parts of the above program –

- The C++ language defines several headers, which contain information that is either necessary or useful to your program. For this program, the header **<iostream>** is needed.
- The line **using namespace std;** tells the compiler to use the std namespace. Namespaces are a relatively recent addition to C++.
- The next line '**// main() is where program execution begins.**' is a single-line comment available in C++. Single-line comments begin with **//** and stop at the end of the line.
- The line **int main()** is the main function where program execution begins.

- The next line **cout << "Hello World";** causes the message "Hello World" to be displayed on the screen.
- The next line **return 0;** terminates `main()` function and causes it to return the value 0 to the calling process.
- In C++, the semicolon is a statement terminator. That is, each individual statement must be ended with a semicolon. It indicates the end of one logical entity.
- Program comments are explanatory statements that you can include in the C++ code. These comments help anyone reading the source code. All programming languages allow for some form of comments. C++ supports single-line and multi-line comments. All characters available inside any comment are ignored by C++ compiler. C++ comments start with `/*` and end with `*/`. A comment can also start with `//`, extending to the end of the line.

TASK1:

Run the following program and check the output

```
#include<iostream>
using namespace std;

int main()
{
    cout << "hello world" << endl; //prints hello world and endl means end the line
    system("pause"); //to stop output window
    return 0;
}
```

TASK2:

Write a C++ program to print the following lines:

You are 10 years old.

You are too young to play the game.

TASK3:

Write five C++ statements to print the asterisk pattern as shown below.

```
*
**
***
****
*****
```