

NOI 2020 C++ Basics Course Content

Note 2

First program - Hello world

Let's create and run our first programme.

In your IDE create a new file and name it "Hello world.cpp".(Any name would work but you have to add the .cpp extension)

Copy paste the following code into your file. We will discuss the content of the code later in this course.

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

int main() {
    cout << "Hello World!";
    return 0;
}
```

Now run the programme and view the output.

Congratulations you have successfully run your first code!

Basic Syntax

Let's understand the basics of coding in C++.

Like words in other languages programming languages too have keywords.

Also like grammar in other languages programming languages too have some rules to follow. Those are called syntaxes.

The basic syntax is as follows.

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

int main() {
    //some code here
    cout << "Hello World!";
    return 0;
}
```

Let's see what that code meant.

#include <iostream>

This is including some codes from some external files so that you can use them in your code. The text inside < > is the name of the library

(A library is a file containing code that can be included and used in another cpp code)

Here "iostream" is the library name. This library contains codes used to handle inputs and outputs. The "cout" used in the code is one of the contents of this library.

using namespace std

This lets us use variable names from standard library.

In depth knowledge on this is not required.

Follow the link for extra reading.

<https://www.tutorialspoint.com/What-does-using-namespace-std-mean-in-Cplusplus>

int main(){}

This is called a function. The function name is "main". This is a special function where the execution of your code happens. Any code inside the { } will be executed line by line.

//some code here

This is called a comment. This is ignored when the code is running.

These are used to write some information on the code to make it easy to understand to the programmer.

Single line comments -

Anything that follows // in the same line will be considered a comment.

Multi line comments -

Anything between /* and */ will be considered a comment and will be ignored at runtime even if multiple lines are included.

cout << "Hello World!";

This is a line of code that is used to display some text in the console. This will be explained in detail later in the input output section.

return 0

This ends the execution of the function. We will discuss what happens to the returned value when we discuss functions.

NOTE: Every C++ statement ends with a semicolon.

Extra resources:

- Hello world application

Video: <https://www.youtube.com/watch?v=e840YAaK620&t=253s>

Reading: https://www.w3schools.com/cpp/cpp_syntax.asp