# C++ Syntax

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## C++ Syntax

Let's break up the following code to understand it better:

### **Example**

#include <iostream>  
using namespace std;  
  
int main() {  
  cout << "Hello World!";  
  return 0;  
}

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### **Example explained**

**Line 1:** #include <iostream> is a **header file library** that lets us work with input and output objects, such as cout (used in line 5). Header files add functionality to C++ programs.

**Line 2:** using namespace std means that we can use names for objects and variables from the standard library.

Don't worry if you don't understand how #include <iostream> and using namespace std works. Just think of it as something that (almost) always appears in your program.

**Line 3:** A blank line. C++ ignores white space. But we use it to make the code more readable.

**Line 4:** Another thing that always appear in a C++ program, is int main(). This is called a **function**. Any code inside its curly brackets {} will be executed.

**Line 5:** cout (pronounced "see-out") is an **object** used together with the insertion operator (<<) to output/print text. In our example it will output "Hello World!".

**Note:** Every C++ statement ends with a semicolon ;.

**Note:** The body of int main() could also been written as:  
int main () { cout << "Hello World! "; return 0; }

**Remember:** The compiler ignores white spaces. However, multiple lines makes the code more readable.

**Line 6:** return 0 ends the main function.

**Line 7:** Do not forget to add the closing curly bracket } to actually end the main function.

## Omitting Namespace

You might see some C++ programs that runs without the standard namespace library. The using namespace std line can be omitted and replaced with the std keyword, followed by the :: operator for some objects:

### **Example**

#include <iostream>  
  
int main() {  
  **std::**cout << "Hello World!";  
  return 0;  
}

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