19CSE201 :Advanced Programming

Lecture 2
Hello World!

By
Ritwik M
Assistant Professor(SrGr)
Dept. Of Computer Science & Engg

From C to C++

Similar but not the same...

```c
#include<stdio.h>

int main()
{
// Lines_of_code;
return 0;
}
```

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

int main()
{
// Lines_of_code;
return 0;
}
```

Anatomy of C++

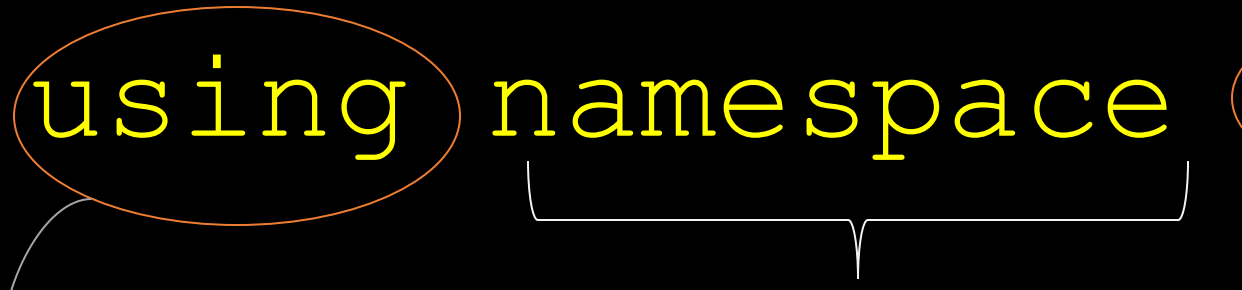
```
#include<iostream>

using namespace std;

int main()
{

// Lines_of_code;

return 0;

}
```

a **header file library** that lets us work with input and output objects

Quite similar to **C**. The **main function** that returns an **integer datatype**

Notice that all statements still **end with a semicolon ";"**

Anatomy of C++



Ends with semicolon

The keyword used to **introduce a name from a namespace** into the current declarative region

Keyword that **allows to group entities** like classes, objects and functions under a name. This way the global scope can be divided in "sub-scopes", each one with its own name.

All the files in the C++ standard library declare all of its entities within the **std** namespace

Anatomy of C++

IMPORTANT NOTE:

- `using namespace std;`

Is generally included as a statement in all C++ programs that use any entity defined in iostream.

- In essence, a namespace defines a scope.

- All C++ standard library types and functions are declared in the std namespace or namespaces nested inside std thus it is widely used in most of the programs.

Comments

```
#include<iostream>

using namespace std;

int main()
{

//This is a single line comment

/*Like in C, if the comment goes for multiple lines,
You can use this multi-line comment syntax*/
return 0;

}
```

Comments are for the readers of the code. The compiler ignores lines starting with // and /* ...*/

Input and Output

C vs C++

```c
#include<stdio.h>
int main(){
int a,b;
scanf("%d",&a);
printf("The entered value
is %d",a);
}
```

```cpp
#include<iostream>
Using namespace std;
int main(){
int a,b;
cin>>a;
cout<<"The entered value is
" <<a;
}
```

Stream Input/Output

```
cout << //means “cout gets a value”

cin >> var //means “cin gives a value to var”



//note: on execution press enter key to end
input
```

Stream Input / Output Cont.

The stream insertion operator "knows" how to output different types of data.

`<<` is the stream insertion operator

`>>` is thestream extraction operat

Stream Input / Output Cont.

Cascading stream insertion operators - using multiple stream insertion operators in a single statement. Also known as concatenating or chaining.

e.g.,

```
cout << “The answer is: ” << result << ".\n";
```

Reserved Words (Keywords)

- Like in C, C++ also has Reserved words, keywords, or word symbols
- They include:
  - int
  - float
  - double
  - char
  - const
  - void
  - return

We will see each of these later

endl vs \n

```
cout << endl;  //Inserts a new line and flushes the stream

cout << "\n";  // Only inserts a new line.
```

Additional problems involving OS

Windows uses "\r\n" for new line while OSx uses "\n"

Good bye C ... Hello C++

```c
#include<stdio.h>


int main()
{
printf("Goodbye C");
return 0;
}
```

```cpp
#include<iostream>

using namespace std;

int main()
{
cout << "Hello C++";
return 0;

}
```

Try out your new skills on HPOJ

URL: http://hpoj.cb.amrita.edu:8000/

Up Next

Variables, Data types & Operators!