



Al-mustaqbal University collage

Biomedical Engineering Department

Class: First

Subject: Computer Skills & Programming

Lecture2: Introduction to C++

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In this lecture

- ▶ Introduction to C++
 - ▶ The general structure of the program
- ▶ Standard Output (cout)
- ▶ Comments in C++

1.1 Introduction to C++

A programming language is a set of rules that provides a way of telling a computer what operations to perform. In 1973, C language is a great tool for systems programming and a software development language on personal computers. Once .use, but usually superseded by C++ which developed in 1983 fashionable, still in Probably the best way to start learning a programming language is by writing a program.

1.2 The general structure of the program

The program in the language (c ++) has a general form when it is written and it is almost constant in its main parts in all programs and the way it is written is as follows

```
#include<iostream.h>
#include<conio.h>
int main ()
{
getch();
}
```

1-#include<iostream.h > : Lines beginning with a hash sign (#) are directives for the preprocessor. In this case the directive #include tells the preprocessor to include the iostream standard file. This specific file (iostream) includes the declarations of the basic standard input - output library in C++, and it is included because its functionality is going to be used later in the program.

2-#include<conio.h> : is a preprocessor directive, used to paste the code Of given file to the current file. conio. h is a non-standerd header file, used mostly by MS Dos compilers like turbo c/c++ to provide console input/output

3-int main() : The main function is the point by where all C++ programs start their execution, independently of its location within the source code. It is essential that all C++ a main function. The word main is followed in the code by a pair of programs have parentheses ().

4-getch() - This function is used to hold the output window, otherwise when you run your code it will display the output window for just a fraction of second. So, it is necessary to use it, if we want to hold our output screen.

1.3 Standard Output (cout)

By default, the standard output of a program is the screen, and the C++ stream object defined to access it is cout<< . For example:

```
cout << "Output sentence"; // prints Output sentence on screen  
cout << 120; // prints number 120 on screen  
cout << x; // prints the content of x on screen
```

The insertion operator (<<) may be used more than once in a single statement :

```
cout << "Hello, " << "I am " << "a C++ statement";
```

It is important to notice that cout does not add a line break after its output unless we explicitly indicate it, therefore, the following statements:

```
cout<<"Computer Programming";  
cout<<" Biomedical Engineering Department ";
```

will be shown in the screen one following the other :

```
Computer Programming Biomedical Engineering Department
```

In C++ a new line character can be specified by using \n (new line) as follows:

```
cout<<"Computer Programming\n";  
cout<<" Biomedical Engineering Department ";
```

or <<endl (end line) as follows :

```
cout<<"Computer Programming "<<endl ;  
cout<<" Biomedical Engineering Department ";
```

output

```
Computer Programming  
Biomedical Engineering Department
```

Example 1

```
#include<iostream.h>  
#include<conio.h>  
int main() {  
cout<<"Hello World" ;  
  getch();  
}
```

Implementation

C:\BC5\BIN\NONAME01.exe

```
Hello World
```

Example 2

```
#include<iostream.h>
#include<conio.h>
int main() {
cout<<"Hello World \n ";
cout<<"Iam learning" c++ ;
getch();
}
```

Implementation

C:\BC5\BIN\NONAME01.exe

```
Hello World
Iam learning c++
```

1.3 Comments in C++

Comments are parts of the source code disregarded by the compiler. They simply do nothing. Their purpose is only to allow the programmer to insert notes or descriptions embedded within the source code. C++ supports two ways to insert comments:

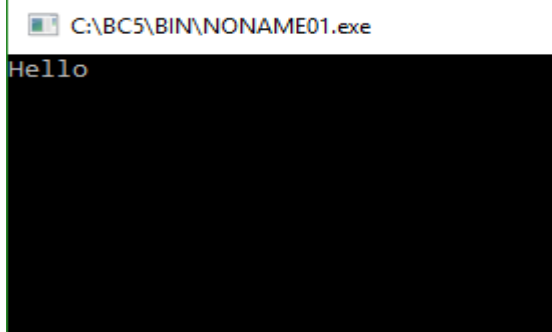
1- // line comment

2- /* block comments */

Example 1

```
// The first program
#include<iostream.h>
#include<conio.h>
Int main(){
cout<<"Hello";
//cout<<"world";
getch();
}
```

Implementation

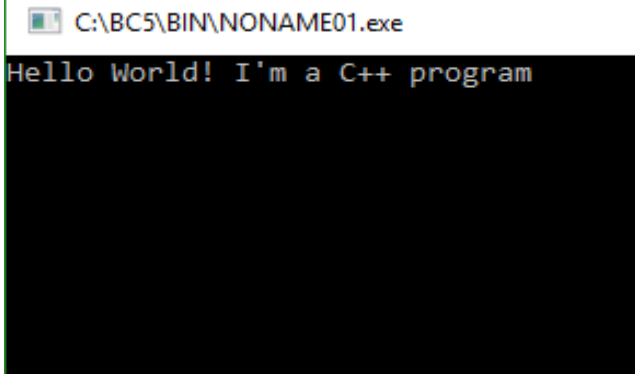


```
C:\BC5\BIN\NONAME01.exe
Hello
```

Example 2

```
/* my second program in C++
with More comments*/
#include<iostream.h>
#include<conio.h>
int main ( ) {
cout<< "Hello World!";//prints Hello World!
cout<<" I'm a C++ program";//prints I'm a C++ program
getch();
}
```

Implementation



```
C:\BC5\BIN\NONAME01.exe
Hello World! I'm a C++ program
```

If you include comments within the source code of your programs without using the comment characters combinations `//`, `/*` or `*/`, the compiler will take them as if they were C++ expressions, most likely causing one or several error messages when you compile it.

Exercises

1-Write a C++ program that outputs the following text on screen:

Oh what

a happy day!

Oh yes,

what a happy day!

2- The following program contains several errors:

```
*/ Now you should not forget your glasses //
```

```
#include<iostream>
```

```
int main {
```

```
cout << "If this text",
```

```
cout >> " appears on your display, ";
```

```
cout << " endl;"
```

```
cout << 'you can pat yourself on '
```

```
<< " the back!" << endl.
```

```
getch();
```

```
)
```

3- Write a C++ program that prints on screen the following sentences:

```
{**** Al-Mustaqbal University College****}
```

```
{* Biomedical Engineering Department *}
```

```
{**First Year**}
```

Thank you