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IT1050- Object Oriented Concepts



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FACULTY OF COMPUTING

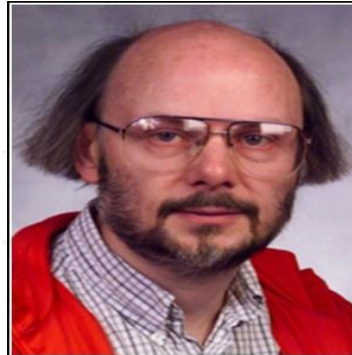


Introduction to C++



C++

- One of the most powerful and popular programming languages
- Evolved from C
- Developed by Bjarne Stroustrup in 1979 at Bell Laboratories
- Provide capabilities for Object Oriented Programming
- Current Version – C++ 20



C makes it easy to shoot yourself in the foot; C++ makes it harder, but when you do, it blows away your whole leg.

— Bjarne Stroustrup —

AZ QUOTES

C vs C++

// C Program

```
#include <stdio.h>
```

```
void main ( )
```

```
{
```

```
    printf ("Hello World !\n");
```

```
}
```

// C++ Program

```
#include <iostream>
```

```
int main ( )
```

```
{
```

```
    std::cout << "Hello World !" ;
```

```
    std::cout << std::endl;
```

```
    return 0;
```

```
}
```

Output :

Hello World !

First C++ Program

```
// C++ Program : prg_01.cpp
//Printing a String
#include <iostream> // allows program to output data to the screen

int main ( ) // Function main begins program execution
{
    std::cout<< "Hello World ! "; // Display message
    std::cout<< std::endl; // New line

    return 0; // indicate that program ended successfully

} // End of main function
```

Comments

```
// C++ Program : prg_01.cpp  
//Printing a String
```

- Comments provide information to the people who read the program
- Comments are removed by the preprocessor, therefore the compiler ignores them
- In C++, there are two types of comments
 - Single line comments `//`
 - Delimited comments `/* */` for comments with more than one line.

Preprocessing Directives

#include <iostream>

- Lines begin with # are processed by the preprocessor before the program is compiled.
- Notifies the preprocessor to include in the program the content of the input/output stream header <iostream>
- “iostream” is a header file containing information used by the compiler when compiling a program with output data to screen or input data from the keyboard using C++ input/output stream

The `main` function

```
int main()  
{  
  
}
```

- C++ programs begin executing at function `main`.
- It is the main building block of a program.
- `int` indicates that `main` returns an integer value.
- `{` (left brace) indicates the begin of the main body and `}` (right brace) indicates the end of the function's body.

Output Statement

```
std::cout<< "Hello World !";
```

- **cout** : to indicate the computer to output something on screen
- **<<** : is the stream insertion operator used to send information to **cout**
- **"Hello World !"** : String / String Literal. What you need to display on screen
- **;** : statement terminator

New Line

```
std::cout<< std::endl ;
```

- **endl** : to go to a new line (same as " \n ")
eg : std::cout<< " \n ";

```
std::cout<< "Hello World ! " << std::endl ;
```

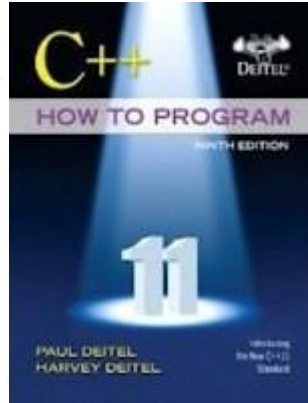
Output :

```
Hello World !
```

Exercise

- Write a C++ program to display your first name, your home town and school using three lines

Reference



Chapter 01 & 02

Deitel & Deitel's (2016), C++ How to Program,
9th Edition