

# INTRODUCTION OF C++

Dr/Ghada Maher  
Eng/ Hossam Medhat

# WHAT IS C++?

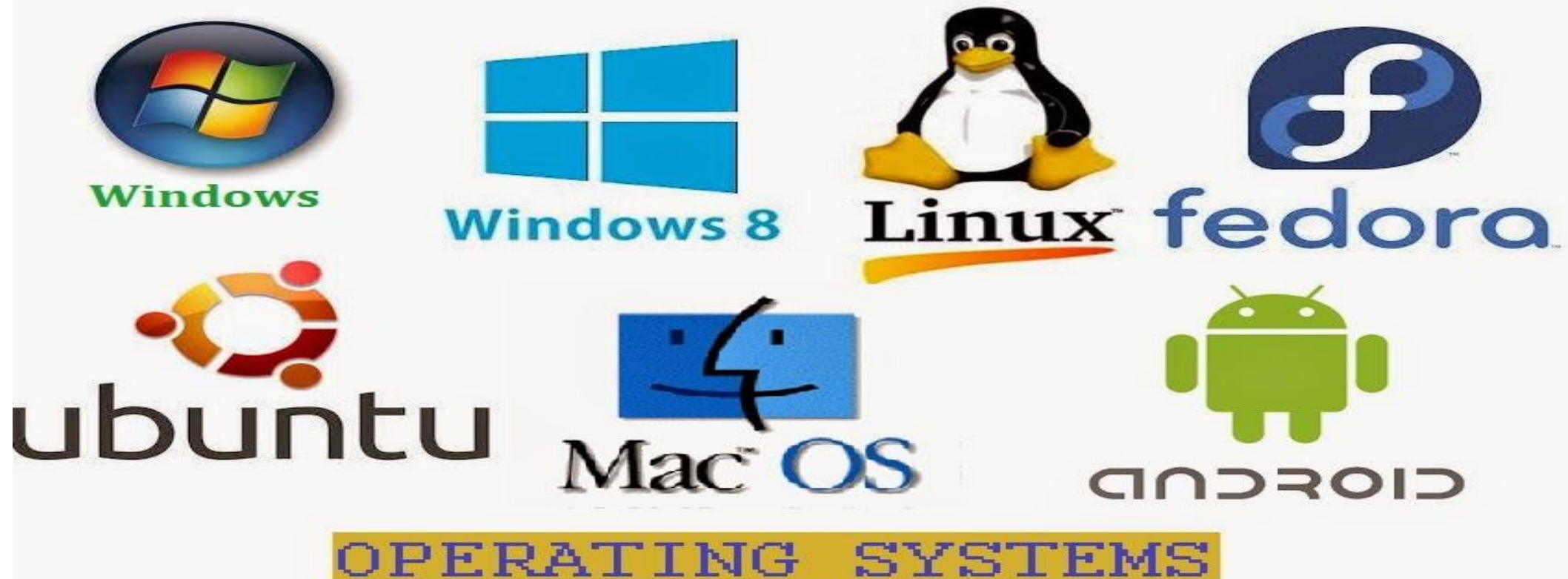
- ❖ C++ was developed by Bjarne Stroustrup, as an extension to the C language ( enhancement language of C ).
- ❖ C++ is a cross-platform language that can be used to create high-performance applications.
- ❖ C++ gives programmers a high level of control over system resources and memory Such as manage **mySQL database**.
- ❖ The language was updated 4 major times in 2011, 2014, 2017, and 2020 to C++11, C++14, C++17, C++20 ( more versions ).



# WHAT IS C++? “CONT”

- ❖ C++ is a popular programming language.
- ❖ C++ is used to create computer programs, and is one of the most used language in game development , graphic interfaces ( Adobe photoshop ) ,  
Browsers ( Google chrome , Firefox ) .

# C++ USES TO IMPLEMENT VARIOUS OPERATING SYSTEMS



# DIFFERENCE BETWEEN C AND C++

- ❖ C++ was developed as an extension of C, and both languages have almost the same syntax.
- ❖ The main difference between C and C++ is that **C++ support classes and objects**, while C does not.
- ❖ C++ is an object oriented language ( OOP ) consist of **Objects , Classes and relationships between classes ( such as inheritance )**.
- ❖ C++ allows code **to be reused**, lowering development costs..



# EXAMPLE OF C++

## Example

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

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

Select C:\Users\hossam\Desktop\11\bin\Debug\11.exe

Hello World!

Process returned 0 (0x0) execution time : 0.197 s

Press any key to continue.

# TYPES OF ERRORS ARE AS FOLLOWS:

- 1) Syntax error
- 2) Logical/Semantic error
- 3) Runtime error

# LOGICAL/SEMANTIC ERROR

- ❖ if the logic is incorrect it is not necessary that you get the desired output.
- ❖ errors are indicated during run time. so not necessary that you get the expected output. Hence, in such cases, we have to check the program for logical errors.

For example,

```
int a=10;  
  
if (a%10=0)  
{  
  
printf("divisible by 10");  
  
}
```

COPY CODE



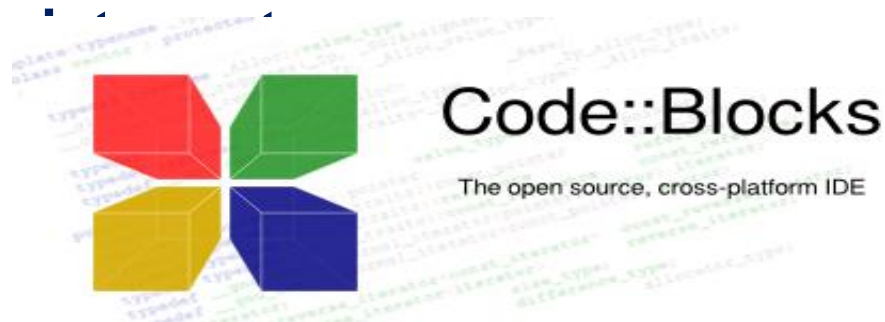
# RUNTIME ERROR

❖ These types of errors are detected during the runtime. Moreover, such errors cause unusual termination of the program. **Some examples of such errors are as follows:**

- 1) dividing a number by 0
- 2) infinite loop
- 3) wrong input by the user

# C++ USES DIFFERENT IDE

❖ **integrated development environment (IDE)** is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of at least a source code editor, build automation tools and a debugger , compiler and

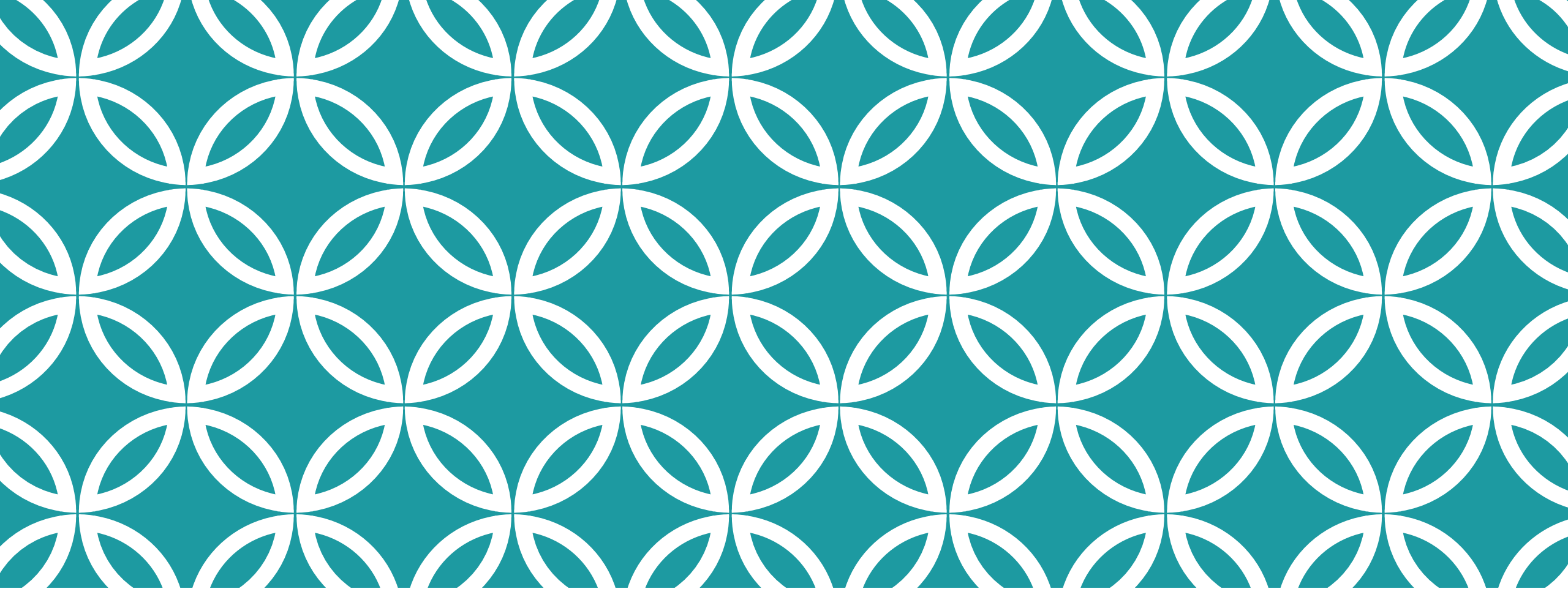


Visual Studio Code



# LINKS TO DOWNLOADS IDE

- ❖ <https://www.codeblocks.org/>
- ❖ <https://code.visualstudio.com/download>
- ❖ <https://netbeans.apache.org/download/index.html>
- ❖ [https://www.onlinegdb.com/online c++ compiler](https://www.onlinegdb.com/online_cplusplus_compiler)
- ❖ <https://www.programiz.com/cpp-programming/online-compiler/>



**THANKS**

**Dr/Ghada Maher**  
**Eng/ Hossam**  
**Medhat**