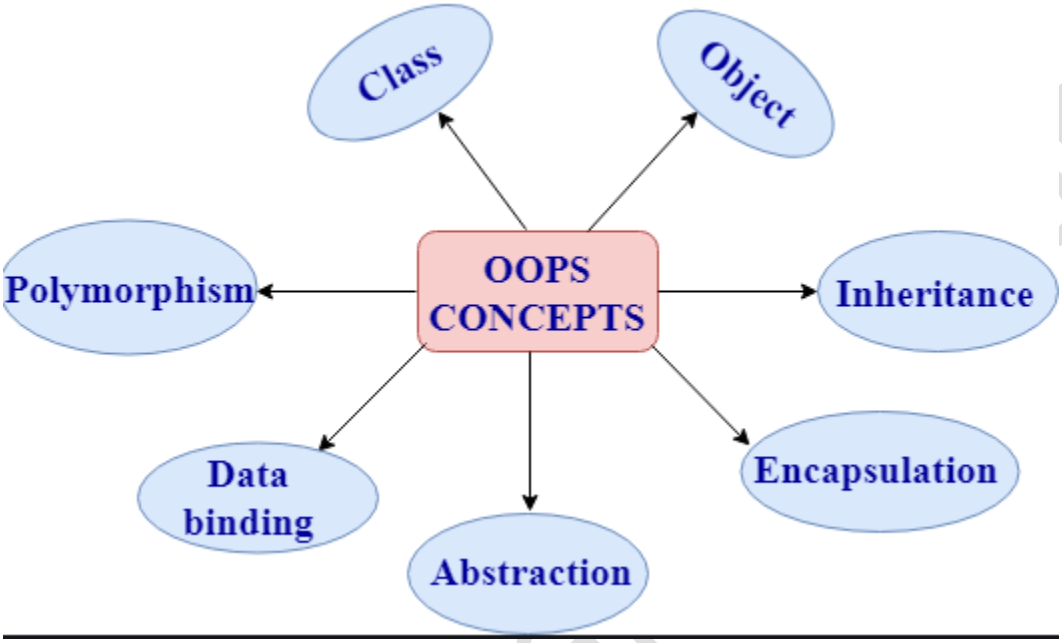
Object-oriented programming – As the name suggests uses objects in programming. Object-oriented programming aims to implement real-world entities like inheritance, hiding, polymorphism, etc in programming. The main aim of OOP is to bind together the data and the functions that operate on them so that no other part of the code can access this data except that function.



Data Abstraction: Data abstraction means, providing only essential information to the outside word and hiding their background details i.e. to represent the needed information in program without presenting the details.

Data Encapsulation: The wrapping up of data and operations/functions (that operate o the data) into a single unit (called class) is known as Encapsulation.

Modularity: Modularity is the property of a system that has been decomposed into a set of cohesive and loosely coupled modules.

Inheritance: Inheritance is the capability of one class of things to inherit capabilities or properties from another class.

Polymorphism: Polymorphism is the ability for a message or data to be processed in more than one form.

Polymorphism have two types

1. **Compile time polymorphism** when the call to the function resolved at compile time it is called as compile time polymorphism. And it is achieved by using function overloading and operator overloading
   Also known as Static polymorphism / Static binding / Early binding / Weak typing / False Polymorphism
2. **Runtime polymorphism**. when the call to the function resolved at run time it is called as run time polymorphism. And it is achieved by using function overriding.
   Also known as Run time / Dynamic polymorphism / Dynamic binding / Late binding / Strong typing / True polymorphism

Class

Class is a blue print which is containing only list of variables and method and no memory is allocated for them. A class is a group of objects that has common properties. A class is a user-defined blueprint or prototype from which objects are created. It represents the set of properties or methods that are common to all objects of one type.

Object

Object is the physical as well as logical entity where as class is the only logical entity. It is a basic unit of Object-Oriented Programming and represents the real-life entities. A C++ program creates many objects which interact by invoking methods.

We will discuss all above point in next tutorials

Types of Error in C++

Error is a abnormal condition whenever it occurs execution of the program is stopped these are mainly classified into following types.

Types of Error in C++

- Compile time error
- Run time error

Compile Time Error

If any error is generated at the time of compilation is known as compile time error, in general these are raised while break down the rules and regulation of programming language. Compile time errors also known as syntax errors.

Run time error

If any error is generated at run time is known as runtime error, in general these are raised because of writing wrong logic in the program.

```
Calling function without existence, divide by zero.

Int a=10,b;

B=a/0; --> infinite

Here out of range of int data type.
```