OOP : (Object Oriented Programming)

OOP is a paradigm(Design concept), it helps the programmers to co-relate the real world scenarios into the programming world in the form of Objects.

Every real world entity is an Object.

Object :

Oops : any substance which has its existence in the real world is known as an Object(real world entity). Every Object will have attributes(State) and behaviors(Actions).

Def :

A block of memory created for a class at the runtime, which represents a real world entity is known as an object or instance of a class.
Note : every Object will have state and behavior.

Class :
class is a blueprint of an Object, which provides the specifications of the object.

Def :

class helps programmers to create their own datatype, which represents the blueprint of an Object.

or

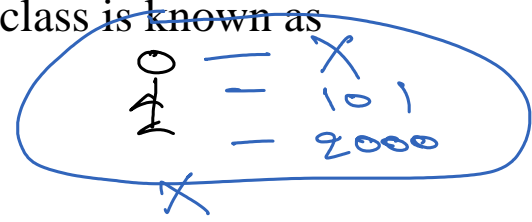class is a user defined non-primitive datatype, which represents the blueprint of an Object.

Note :
1. a class should be ready before creating an object.
2. We can create any number of objects for one class.
3. The process of creating an object for a class is known as **instantiation**.

example

Bank Customer

— name
— acno
— bal
— deposit ()

Step1 : design a class / Use a class designed by someone else

```
class BankCustomer
{
    String name  ;
    int acno ;
    double bal ;
    BankCustomer() {}
    BankCustomer( String name , int acno , double bal )
    {
        this.name = name ;
        this.acno = acno ;
        this.bal = bal ;
    }
    void deposit( int amount )
    {
        bal = bal + amount ;
    }
}
```

Step2 : create an Object :

```
BankCustomer c1 = new BankCustomer( "X" , 101 , 2000  ) ;
```

OOP Principles :

It has 4 principles,

1. Encapsulation
2. Inheritance
3. Polymorphism
4. Abstraction