=> Constructors :-

->Constructors are the special methods having same name as that of class name and does not have any return type

-> EXAMPLE :-

```
     class Vehicle
     {
            Vehicle()
           {

           }
     }
```

-> USE OF CONSTRUCTOR :- Constructors are used to initialize an object but not for object creation

-> WHEN CONSTRUCTORS ARE EXECUTED

Constructors are executed exactly at the time of object creation, not before or after object creation

-> HOW CONSTRUCTORS ARE EXECUTED :-

Constructors are executed automatically when we create an object

-> SYNTAX :-

```
access-modifiers ClassName(list of parameters) throws Exception1, Exception2, --
{
         //initialization code
}
```

-> We can use any access-modifier for the constructor i.e. public, private, protected or default. This is done to control the object creation

-> We cannot use abstract, final, static, synchronized etc keywords with constructors

-> TYPES OF CONSTRUCTORS :- There are 3 types of constructors :-

1. Default Constructors (compiler)
2. 0-Argument Constructors (programmer)
3. Parametrized Constructors (programmer)

```java
public class Animal {

    int age ;
    String color ;
    void show(){
        System.out.println("Hello World");
    }

    public static void main(String[] args) {
        Animal dog = new Animal() ;
        dog.age=10 ;
        dog.color="Blue"  ;
        System.out.println(dog.color);

        Animal cat = new Animal() ;
        cat.age=20;
        cat.color="Red"  ;
        System.out.println(cat.age);

    }
}
```

1. Default Constructors :-

-> Whenever we dont create any constructor in class, then compiler will always create a constructor which is known as default constructor

-> Default constructors are used to provide the default values to the objects like 0, null etc depending on the type.

```
public class Animal {
    int age ;
    String color ;
    void show(){
        System.out.println("Hello World");
    }

    public static void main(String[] args) {
      Animal dog = new Animal() ;
      System.out.println(dog.age);
      System.out.println(dog.color);

    }
}
```

-> Note : If programmer creates any one constructor then compiler will not generate default constructor

->Access-modifier of default constructor will be same at that of class access-modifier

->Access-modifier of default constructor cannot be private or protected because outer class cannot be private or protected

->Default constructor has only one line of code i.e. super();

2. 0-Argument Constructors :-

-> These constructors are created by the programmer

```
    class Test
    {
        Test()
        {

        }
    }
```

3. Parametrized Constructors :-

-> These constructors are created by the programmer

```
    class Test
    {
        Test(int a, int b)
        {

        }
     }
```

=> What is difference between Methods & Constructors :-

1. Methods always have return type

Constructors does not have any return type even void

2. Methods can have any valid name

Constructors always have same name as that of class name

3. Methods are used to perform any particular task

Constructors are always used to initialize an object

4. We have to call the methods explicitly by using object name or class name

Constructors are called automatically when we create an object

5. If we dont create any method then compiler will not generate any method

If we dont create any constructor then compiler
will generate default constructor