Constructors in Java

In Java, a constructor is a block of codes similar to the method.

It is called when an instance of the class is created.

At the time of calling constructor, memory for the object is allocated in the memory.

It is a special type of method which is used to initialize the object.

Every time an object is created using the new() keyword, at least one constructor is called.

It calls a default constructor if there is no constructor available in the class. In such case, Java compiler provides a default constructor by default.

There are **two types** of constructors in Java:

no-arg constructor,

parameterized constructor.

### Rules for creating Java constructor

1. Constructor name must be the same as its class name
2. A Constructor must have no explicit return type
3. A Java constructor cannot be abstract, static, final, and synchronized

#### Note: We can use access modifiers while declaring a constructor. It controls the object creation. In other words, we can have private, protected, public or default constructor in Java.

## Java Default Constructor

A constructor is called "Default Constructor" when it doesn't have any parameter.

//Java Program to create and call a default constructor

**class** Bike1{

//creating a default constructor

Bike1(){

System.out.println("Bike is created");

}

//main method

**public** **static** **void** main(String args[]){

//calling a default constructor

Bike1 b=**new** Bike1();

}

}

#### Rule: If there is no constructor in a class, compiler automatically creates a default constructor.

### Q) What is the purpose of a default constructor?

The default constructor is used to provide the default values to the object like 0, null, etc., depending on the type.

### Java Parameterized Constructor

A constructor which has a specific number of parameters is called a parameterized constructor.

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### Why use the parameterized constructor?

The parameterized constructor is used to provide different values to distinct objects. However, you can provide the same values also.

## Constructor Overloading in Java

In Java, a constructor is just like a method but without return type. It can also be overloaded like Java methods.

Constructor overloading in Java is a technique of having more than one constructor with different parameter lists. They are arranged in a way that each constructor performs a different task. They are differentiated by the compiler by the number of parameters in the list and their types.

## Java Copy Constructor

There is no copy constructor in Java. However, we can copy the values from one object to another like copy constructor in C++.

There are many ways to copy the values of one object into another in Java. They are:

* By constructor
* By assigning the values of one object into another
* By clone() method of Object class