

Constructors

Java Constructors

A constructor in Java is a **special method** that is used to initialize objects. The constructor is called when an object of a class is created. It can be used to set initial values for object attributes:

➤ Types of Constructors:

1. Default/Non-Parameterized Constructor.
2. Parameterized Constructor.

1. Default/Non-Parameterized Constructor Example:

```
class rectangle
{
    int l;
    int b;

    rectangle()
    {
        l=5;
        b=6;
    }
}

public class practice
{
    public static void main()
    {
        rectangle r1=new rectangle();
        System.out.print(r1.l+" "+r1.b);
    }
}
```

2. Parameterized Constructor Example.

```
class rectangle
{
    int l;
    int b;

    rectangle(int length,int breadth)
    {
        l=length;
        b=breadth;
    }
}

public class practice
{
    public static void main()
    {
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter the value of length and breadth of the rectangle:");
        int l=sc.nextInt();
        int b=sc.nextInt();
        rectangle r1=new rectangle(l,b);
        System.out.print(r1.l+" "+r1.b);
    }
}
```

➤ Characteristics of Constructors

- The name of the constructor must be same as that of the class
- No return type can be specified for constructor
- A constructor can have parameter list.
- The constructor function can be overloaded.
- The compiler generates a constructor, in the absence of a user defined constructor.
- Compiler generated constructor is public member function.
- The constructor is executed automatically when the object is created.
- A constructor can be used explicitly to create new object of its class type

➤ Difference between Constructors and methods:

Constructors	Methods
A Constructor is a block of code that initializes a newly created object.	A Method is a collection of statements which returns a value upon its execution.
A Constructor can be used to initialize an object.	A Method consists of Java code to be executed.
A Constructor is invoked implicitly by the system.	A Method is invoked by the programmer.
A Constructor is invoked when a object is created using the keyword new .	A Method is invoked through method calls.
A Constructor doesn't have a return type.	A Method must have a return type.

➤ Constructor Overloading:

The constructor overloading can be defined as the concept of having more than one constructor with different parameters so that every constructor can perform a different task.

Example:

```
import java.util.Scanner;
class student
{
    student()
    {
        System.out.println("I am a default constructor");
    }

    student(String name)
    {
        System.out.println("My name is"+name);
    }

    student(String name, int roll)
    {
        System.out.println("My name is "+name+" and my roll number is "+roll+".")
    }

    student(String name, int roll,int cls)
    {
        System.out.println("My name is "+name+" and my roll number is "+roll+". I
study in class "+cls+".");
    }
}

public class practice
{
    public static void main()
    {
        student s1=new student();
        student s2=new student("Gayatri Gazmer");
        student s3=new student("Gayatri Gazmer",24);
        student s4=new student("Gayatri Gazmer",24,10);
    }
}
```