Constructor

Q: What is a constructor?

1.It is a block of code which executes a targeted logic.

2.It Initializes the object.

3.Its Name should be same as that of class name.

4.It does not have any return type.

5.A Java constructor cannot be abstract, static, final, and synchronized.

6. `if no constructor is declared then the compiler creates its own constructor called as Default Constructor.`

7. A Constructor can be Parameterized and Non-Parameterized constructor.


```
public class DefaultConstructor
{
    int a;
    long b;

    void values()
    {
        System.out.println("a is: "+a);
        System.out.println("b is: "+b);
    }
    public static void main(String[] args)
    {
        DefaultConstructor  obj=new DefaultConstructor();

        obj.values();


    }

}
```

o/p:

```
a is: 0
b is: 0
```

Q: What is Constructor Overloading?

Q: Can there be more than one constructor in a same class?

1.Yes.

2.Constructor Overloading:

a. When Multiple Constructors are declared and defined inside a Single class with Different Parameters is called as Constructor Overloading.

b. It is also achieved by just changing the datatypes or Number of parameters inside constructor declaration.


```
class Java
{
	int a;
	int b;

	Java()//-->Name should be same as that of class name, no
return type
	{
		System.out.println("Java Class Constructor");

		System.out.println("a is:"+a);
		System.out.println("b is:"+b);

	}
	Java(int a)// Parameterized Constructor

	{

		System.out.println("Java Class Constructor 2: "+a);

	}

	Java(char  b)// Same Number of Parameters with Different DataTypes
	{
		System.out.println("Java Class Constructor 3: "+b);

	}
	Java(char a,char b) // Different Number of Parameters
	{

		System.out.println("Java Class Constructor 4: "+a);
		System.out.println("Java Class Constructor 4: "+b);


	}

}
```


```
public class Main
{

    public static void main(String[] args)
    {
//Calling each constructor with different
objects
        Java obj=new Java();
        Java obj2=new Java(17);
        Java obj3=new Java('K');
        Java obj4=new Java('p','r');

    }

}
```

```
Java Class Constructor
Java Class Constructor 2: 17
Java Class Constructor 3: K
Java Class Constructor 4: p
Java Class Constructor 4: r
```

Q: What is a super() constructor?

Super()→Super Constructor.

1.It Calls the constructor of the Immediately parent class.

2. The Execution of Constructor should be in the sequence in which they are declared. Hence super() should be the first line of code inside any other constructor.

3.super() can be parameterized and non-parameterized.

4.Inheritance is required to use super().

5. The **super** keyword in Java is a reference variable which is used to refer immediate parent class object.

6.Whenever you create the instance of subclass, an instance of parent class is created implicitly which is referred by super reference variable.


```
class Max
{
		Max()
		{

			System.out.println("Max Constructor");
			System.out.println("\n------------------------\n");
		}

}

class Mini extends Max
{
	Mini(int a,int b,int c)
	{
		super();
		System.out.println("\nMini Constructor");
		System.out.println("a is:"+a);
		System.out.println("b is:"+b);
		System.out.println("c is:"+c);
		System.out.println("\n------------------------\n");

	}


}

class Normal extends Mini
{
	Normal(char a, int b,double d)
	{
		super(33,77,81);

		System.out.println("\nNormal Constructor");
		System.out.println("a is:"+a);
		System.out.println("b is:"+b);
		System.out.println("d is:"+d);
		System.out.println("\n--------------------\n");

	}
```


```
}

class Avg extends Normal
{

	Avg(double db)
	{
		super('p',17,123.57);

			//Super Constructor
		System.out.println("\nAvg Constructor");
		System.out.println("db is:"+db);


	}



}
public class Main2
{

	public static void main(String[] args)
	{
		/*Max obj=new Max();
		Mini obj2=new Mini(10,20,30);
		Normal obj3=new Normal('k',17,345.789);*/


		Avg obj4=new Avg(1233.456);

	}

}
```

Output:

```
Max Constructor

--------------------------


Mini Constructor
a is:33
b is:77
c is:81

--------------------------


Normal Constructor
a is:p
b is:17
d is:123.57

---------------------


Avg Constructor
db is:1233.456
```


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