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AIM:

Program on constructor and constructor overloading.

THEORY:

Constructor

- 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, and parameterized constructor.
- Note: It is called constructor because it constructs the values at the time of object creation. It is not necessary to write a constructor for a class. It is because java compiler creates a default constructor if your class doesn't have any.

- There are three rules defined for the 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

- There are two types of constructors in Java:
  1. Default constructor (no-arg constructor)
     - A constructor is called "Default Constructor" when it doesn't have any parameter.
     - The default constructor is used to provide the default values to the object like 0, null, etc., depending on the type.
  2. Parameterized constructor
     - A constructor which has a specific number of parameters is called a 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.

CONCLUSION:

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, and Constructor overloading is a concept of having more than one constructor with different parameters list, in such a way so that each constructor performs a different task. In this experiment we have successfully executed a program to display the concept of using a constructor and constructor overloading.

CODE:

```
public class PassByValue {
    static int k = 10;

    // Passing a Value [primitive Data Type]
    static void passPrimitive(int j) {
        System.out.println("the value of passed primitive is " + j);
        j = j + 1;
    }

    // Passing an Object
    static void passReference(EmployeeTest emp) {
        EmployeeTest reference = emp;
        System.out.println("the value of name property of our object
is " + emp.getName());
        reference.setName("Bond");
    }

    public static void main(String[] args) {
        EmployeeTest ref = new EmployeeTest();
```

```
        ref.setName("JARVIS");
        passPrimitive(k);
        System.out.println("Value of primitive after get passed to
method is " + k);
        passReference(ref);
        System.out.println("Value of property of object after
reference get passed to method is " + ref.getName());
    }
}

class EmployeeTest {
    String name;

    public String getName() {
        return name;
    }

    public void setName(String name) {
        this.name = name;
    }
}
```

OUTPUT: