**Experiment No. 3**

**Problem Statement:**

**Constructor:**

Create a Java program to demonstrate the use of constructors. Write a class with a default constructor and one or more parameterized constructors to initialize object properties. The program should showcase the differences between the two types of constructors.

**Objectives:**

To understand concept of Constructor in Java.

**Theory:**

**I. Constructor**: A constructor in Java is a special method used to initialize objects. It is called automatically when an object of a class is created. The primary purpose of a constructor is to initialize the instance variables of a class.

**II. Key Features of a Constructor:**

1. Same Name as the Class: A constructor must have the same name as its class.
2. No Return Type: Constructors do not have a return type (not even void).
3. Automatically Called: It is called automatically when an object is created.
4. Overloading: Like methods, constructors can also be overloaded.

**III. Types of Constructors**

1. **Default Constructor**:
   * A constructor with no parameters.
   * If no constructor is explicitly defined, Java provides a default constructor.
   * Example:

class Example

{

int number;

Example()

{

number = 0; // Default value

}

}

1. **Parameterized Constructor**:
   * A constructor that accepts arguments to initialize the object.
   * Example:

class Example

{

int number;

Example(int num)

{

number = num; // Assign value to instance variable

}

}

1. **Copy Constructor**:
   * A constructor that creates an object by copying another object of the same class.
   * Java does not provide a built-in copy constructor, but you can define one.
   * Example:

class Example

{

int number;

Example(Example obj)

{

number = obj.number; // Copy value

}

}

**Viva Questions:**

1. What is a constructor in Java?
2. What are the key characteristics of a constructor?
3. What is the difference between a constructor and a method?
4. What is a default constructor?
5. What is a parameterized constructor?
6. Can a constructor be overloaded?
7. What is the purpose of the this() keyword in constructors?
8. What is the purpose of the super() keyword in constructors?
9. Can a constructor be inherited?
10. What will happen if you don't provide any constructor in a class?

**Conclusion:**