JAVA PROGRAMMING PRACTICAL JOURNAL

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1.   **OOPs concepts in Java – 1**

a)   Write a program to create a class and implement a default, overloaded and copy Constructor.

```java
class MyClass
{
        private int a;

        // Default Constructor
        public MyClass( )
        {
            System.out.println("Default Constructor");
        }

        // Overloaded Constructor
        public MyClass(int value)
        {
                a=value;
                System.out.println("Parameterized Constructor and value is: "+a);
        }

        // Copy Constructor
        public MyClass(MyClass other)
        {
                a = other.a;
                System.out.println("Copy Constructor and value is: "+a);
        }
}

public class Pr
{
        public static void main(String[ ] args)
        {

                MyClass obj1 = new MyClass( );
                MyClass obj2 = new MyClass(7);
                MyClass obj3 = new MyClass(obj2);

        }
}
```

Output :

```
Administrator: Command Prompt

D:\NewJavaP>javac Pr.java

D:\NewJavaP>java Pr
Default Constructor
Parameterized Constructor and value is: 7
Copy Constructor and value is: 7
```

b) **Write a program to create a class and implement the concepts of Method Overloading.**

```java
class OperOver
{
        // Method to add two integers
        public int add(int a, int b)
        {
            return a + b;
        }
        // Method to add three integers
        public int add(int a, int b, int c)
        {
            return a + b + c;
        }
}
public class Pr1b
{
        public static void main(String[ ] args)
        {
                OperOver obj = new OperOver( );

                // Method Overloading Examples
                int sum1 = obj.add(5, 10);
                int sum2 = obj.add(5, 10, 15);

                System.out.println("Sum of two integers: " + sum1);
                System.out.println("Sum of three integers: " + sum2);
        }
}
```

Output :

```
D:\NewJavaP>javac Pr1b.java

D:\NewJavaP>java Pr1b
Sum of two integers: 15
Sum of three integers: 30
```

c) **Write a program to create a class and implement the concepts of Static methods.**

```java
class DemoStaticMethods
{
        // Static method to add two numbers
        public static int add(int a, int b)
        {
            return a + b;
        }
        // Static method to subtract two numbers
        public static int subtract(int a, int b)
        {
            return a - b;
        }
}
public class Pr1c
{
        public static void main(String[ ] args)
        {
                // Calling static methods directly on the class
                int sum = DemoStaticMethods.add(8, 4);
                int difference = DemoStaticMethods.subtract(7, 6);
                System.out.println("Sum: " + sum);
                System.out.println("Difference: " + difference);
        }
}
```

Output :

```
D:\NewJavaP>javac Pr1c.java

D:\NewJavaP>java Pr1c
Sum: 12
Difference: 1
```