

### **Program 3: Develop programs for implementation**

**a) Constructor, parameterized constructor**

**b) Constructor overloading**

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**CLASS : G3 (A)**

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**A) DEFAULT CONSTRUCTOR:**

**CODE:**

```
public class Constructors {  
    int num;  
    String name;  
    Constructors(){  
        System.out.println("Default Constructor called");  
    }  
    public static void main(String[] args) {  
        Constructors c1 = new Constructors();  
        System.out.println(c1.name);  
        System.out.println(c1.num);  
    }  
}
```

**OUTPUT:**

Windows PowerShell

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PS C:\Users\KIRAN> cd D:\java

PS D:\java> javac Constructors.java

PS D:\java> java Constructors

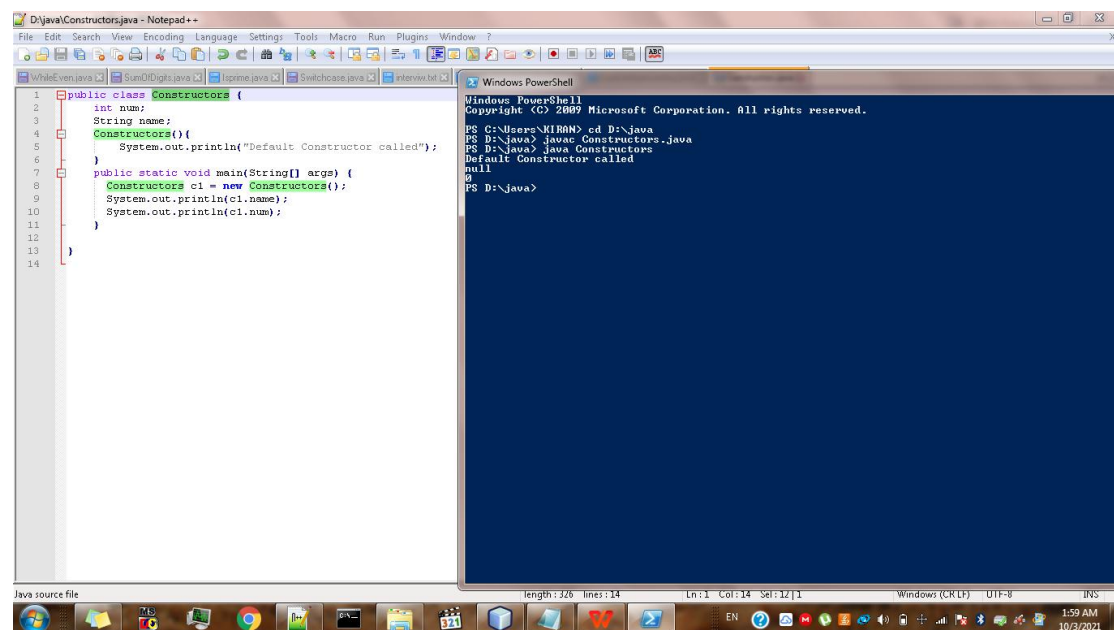
Default Constructor called

null

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PS D:\java>

OUTPUT:



```
1 public class Constructors {
2     int num;
3     String name;
4     Constructors(){
5         System.out.println("Default Constructor called");
6     }
7     public static void main(String[] args) {
8         Constructors c1 = new Constructors();
9         System.out.println(c1.name);
10        System.out.println(c1.num);
11    }
12 }
13
14
```

```
Windows PowerShell
Copyright (C) 2009 Microsoft Corporation. All rights reserved.

PS C:\Users\KIRAN> cd D:\java
PS D:\java> javac Constructors.java
PS D:\java> java Constructors
Default Constructor called
null
PS D:\java>
```

B) Parameterized Constructor:

CODE:

```
public class Parameterized {
    // constructor with one argument
    Parameterized(String name)
    {
        System.out.println("Constructor with one " +
            "argument - String : " + name);
    }

    // constructor with two arguments
    Parameterized(String name, int age)
    {

        System.out.println("Constructor with two arguments : " +
            " String and Integer : " + name + " "+ age);

    }

    // Constructor with one argument but with different
    // type than previous..
    Parameterized(long id)
    {
```

```

        System.out.println("Constructor with one argument : " +
                            "Long : " + id);
    }

    public static void main(String[] args) {
        Parameterized c1 = new Parameterized("Chhatre");

        // Invoke the constructor with two arguments
        Parameterized c2 = new Parameterized("Minal", 19);

        // Invoke the constructor with one argument of
        // type 'Long'.
        Parameterized c3 = new Parameterized(1234567);
    }
}

```

OUTPUT:

```

PS D:\java> javac Parameterized.java
PS D:\java> java Parameterized
Constructor with one argument - String : Chhatre
Constructor with two arguments : String and Integer : Minal 19
Constructor with one argument : Long : 1234567
PS D:\java>

```

The screenshot displays a Windows desktop environment. On the left, a Notepad++ window titled 'D:\java\Parameterized.java - Notepad++' shows the Java source code. The code defines a class 'Parameterized' with three constructors: one for a String, one for a String and an Integer, and one for a Long. A 'main' method instantiates three objects: 'c1' with 'Chhatre', 'c2' with 'Minal' and '19', and 'c3' with '1234567'. On the right, a Windows PowerShell window shows the execution of the program. The output matches the expected results: 'Constructor with one argument - String : Chhatre', 'Constructor with two arguments : String and Integer : Minal 19', and 'Constructor with one argument : Long : 1234567'.

```

D:\java\Parameterized.java - Notepad++
1 public class Parameterized {
2     // constructor with one argument
3     Parameterized(String name)
4     {
5         System.out.println("Constructor with one " +
6                             "argument - String : " + name);
7     }
8
9     // constructor with two arguments
10    Parameterized(String name, int age)
11    {
12        System.out.println("Constructor with two arguments : " +
13                            "String and Integer : " + name + " " + age);
14    }
15
16    // Constructor with one argument but with different
17    // type than previous..
18    Parameterized(long id)
19    {
20        System.out.println("Constructor with one argument : " +
21                            "Long : " + id);
22    }
23
24    public static void main(String[] args) {
25        Parameterized c1 = new Parameterized("Chhatre");
26
27        // Invoke the constructor with two arguments
28        Parameterized c2 = new Parameterized("Minal", 19);
29
30        // Invoke the constructor with one argument of
31        // type 'Long'.
32        Parameterized c3 = new Parameterized(1234567);
33    }
34 }
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```

## C) CONSTRUCTOR OVERLOADING:

CODE:

```
public class ConstructorOverloading {
    int a;
    double b;
    String c;
    ConstructorOverloading(){
        a=100;
        b= 22.22;
        c="Minal";
        System.out.println(a+" "+b+" "+c);
    }
    ConstructorOverloading(int x){
        a=x;
        System.out.println(a);
    }
    ConstructorOverloading(double y, String z){
        b=y;
        c=z;
        System.out.println(b+" "+c);
    }
    public static void main(String[] args) {
        ConstructorOverloading c1 = new ConstructorOverloading();
        ConstructorOverloading c2 = new ConstructorOverloading(4);
        ConstructorOverloading c3 = new
ConstructorOverloading(2.3,"Chhatre");
    }
}
```

OUTPUT:

```
PS D:\java> javac ConstructorOverloading.java
PS D:\java> java ConstructorOverloading
100 22.22 Minal
4
2.3 Chhatre
PS D:\java>
```

The screenshot displays a Windows desktop environment. On the left, a Java IDE (NetBeans) is open, showing a file named 'D:\java\ConstructorOverloading.java'. The code defines a class 'ConstructorOverloading' with three constructors: a no-argument constructor, a constructor taking an integer 'a', and a constructor taking a double 'y' and a String 'z'. The 'main' method creates three instances of the class using these constructors. On the right, a Windows PowerShell terminal window is open, showing the compilation and execution of the Java code. The terminal output confirms that the code compiled successfully and ran as expected, printing the values 'a=100', 'b=22.22', and 'c=Minal'.