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1. Program using constructor and destructor.

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.

★ Rules for creating java constructor.

1. constructor name must be the same as its name.
2. A constructor must have no explicit return type.
3. A Java construct cannot be abstract, static, final and synchronized.

★ Types of constructor.

1. Default construct
2. Parameterized constructor.

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```
class Students {
    int id;
    String name;
    int age;

    Students (int i, String n) {

    id = i;
    name = n;
    }

    Students (int i, String n, int a) {

    id = i;
    name = n;
    age = a;
    }
    void display () {

    System.out.println (id + "  " + name + "
                                + age);
    }
    public static void main (String args[]) {

    Students s1 = new Students (111, "Kara
    Students s2 = new Students (222, "Aryan", 25
    s1.display ();
    s2.display ();
```

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2. Write a program on Packages?

⇒ A Package can be defined as a grouping of related types (classes, interface, enumerations and annotations) providing access protection and namespace management.

⇒ Some of the existing package in java are -

java.lang - bundles the fundamental classes.
java.io - classes for input, output function are bundled in this Package.

```
Package animals;
/* File name : MammalInt.java */
public class MammalInt implement Animal {
public void eat () {
    System.out.println ("Mammal eats");
}
public void travel () {
    System.out.println ("Mammal travels");
}
```

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2. public int noOfLegs() {
return 0;
}

public static void main (String args[])
{
MammalInt m = new MammalInt();
m.eat();
m.travel();
}
}

3. Write a program using function overloading.

⇒ Overloading :-

1. Two or more methods within the same class that share the same name with different parameters list.

2. The overload method must differ in the type and/or number of their parameters.

3. Overloaded may have different return types.

4. Constructors can also be overloaded.

3.

```
class MotorBike {

private String startMethod = "kick";

public void start() {
    System.out.println(startMethod +
        " starting ...");
}
public void start(String method) {
    this.startMethod = method;

    System.out.println(startMethod +
        " starting ...");
    }
}
public class DemoApp {
    public static void main(String[]
                            arg) {

MotorBike motorBike = new MotorBike();

    motorBike.start();
    motorBike.start("Self");
    }
}.
```

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4. Programs using inheritance?

⇒ Inheritance in java is a mechanism in which one object acquires all the properties and behaviors of a parent object.

```
class A {
void msg() {
System.out.println("Hello");
}
class B {
void msg() {
System.out.println("Welcome");
}
class C extends A, B {
public static void main (String arg[])
{
C obj = new C();
obj.msg();
}
}
```

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5. Programs using files?

To write the file, we must open the files in a mode that supports writing. for example, if you open a file in "r" mode, you won't be able to write the file as "r" is read only mode that only allows reading.

```
import java.io.FileWriter;
import java.io.IOException;

class CreateFile
{
    public static void main (String[] args)
        throws IOException {

        String str = "File Handling in
                    java using " +
        "FileWriter and FileReader";

FileWriter fw = new FileWriter ("output.
                    txt");
for (int i = 0; i < str.length(); i++)
    fw.write (str.charAt(i));

System.out.println ("Writing Successful");
    fw.close();
}
```

3.

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6. Programs ~~using~~ on Swing?

```
import javax.swing.*;
public class Test1
{
    JFrame frame;
    test()
    {
        frame = new JFrame("first way");
        JButton button = new JButton("let's see");
        button.setBounds(200, 150, 90, 50);
        //frame.setBounds(200,
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.add(button);
        frame.setSize(500, 600);
        frame.setLayout(null);
        frame.setVisible(true);
    }
```

```
public static void main (String [] args ())
{
    new test1();
}
```

3.

⇒ Swing is a part of java foundation classes (JFC), the other parts of JFC are java 2D and Abstract window toolkit (AWT). AWT, Swing & java 2D are used for building graphical user interfaces (GUI) in java. In this