Assignment: 3

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Aim: Inheritance

1. What will be the output of this program?

```
class SuperClass {
  void superClassMethod(Number n) {
    System.out.println("From Super Class");
  }
}
class SubClass extends SuperClass {
  void superClassMethod(Double d) {
    System.out.println("From Sub Class");
  }
}
public class MainClass {
  public static void main(String[] args) {
    SubClass sub = new SubClass();
    sub.superClassMethod(123321);
  }
}
```

Output: From Super Class
because subclass is inherited from superclass and method inside superclass is called through it

2. Create a class named 'Member' having the following data members:

   a. Name
   b. Age
   c. Phone number

d. Address

e. Salary

- It also has a method named 'printSalary' which prints the salary of the members.
- Two classes 'Employee' and 'Manager' inherits the 'Member' class.
- The 'Employee' and 'Manager' classes have data members 'specialization' and 'department' respectively. Now, assign name, age, phone number, address and salary to an employee and a manager by making an object of both of these classes and print the same.

```java
class Member
{
    String name, address, phonenumber;

    int age;

    long salary;

    void printSalary()
    {
        System.out.println("Salary is "+salary);
    }
}
class Employee extends Member
{
    String specialization;
}
class Manager extends Member
```
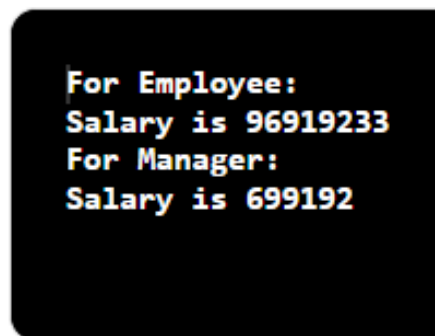
```java
{

    String department;

}


public class company

{

    public static void main(String args[])

    {

        Employee e = new Employee();

        e.name="Shrenik";

        e.age=19;

        e.phonenumber="9158069420";

        e.address="Los Santos";

        e.salary=96919233;

        System.out.println("For Employee: ");

        e.printSalary();

        Manager m = new Manager();

        m.name="ManagerSahab";

        m.age=21;

        m.phonenumber="9212173314";

        m.address="Andheri";

        m.salary=699192;
```

```java
        System.out.println("For Manager: ");

        m.printSalary();

    }

}
```

```
For Employee:
Salary is 96919233
For Manager:
Salary is 699192
```

3. Create a class named 'Rectangle' with two data members 'length' and 'breadth' and two methods to print the area and perimeter of the rectangle respectively. Its constructor having parameters for length and breadth is used to initialize length and breadth of the rectangle. Let class 'Square' inherit the 'Rectangle' class with its constructor having a parameter for its side (suppose s) calling the constructor of its parent class as 'super(s,s)'. Print the area and perimeter of a rectangle and a square.

```java
class Rectangle

{

    int l, b;

    Rectangle(int l, int b)

    {

        this.l=l;
```

```java
        this.b=b;

    }

    int area()

    {

        return l*b;

    }

    int perimeter()

    {

        return 2*(l+b);

    }

}

class Square extends Rectangle

{

    Square(int s)

    {

        super(s,s);

    }

}


public class company

{

    public static void main(String args[])
```

```
    {

        Rectangle r = new Rectangle(6,9);

        Square s = new Square(8);

        System.out.println("Area of Rectangle is "+r.area());

        System.out.println("Perimeter of Rectangle is "+r.perimeter());

        System.out.println("Area of Square is "+s.area());

        System.out.println("Perimeter of Square is "+s.perimeter());

    }

}
```
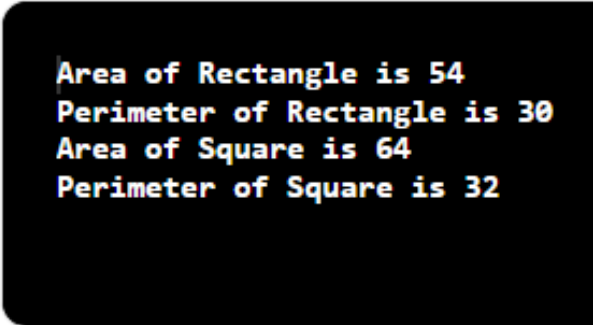
```
Area of Rectangle is 54
Perimeter of Rectangle is 30
Area of Square is 64
Perimeter of Square is 32
```

4. What will be the output of this program?

```
class X {
  static void staticMethod() {
    System.out.println("Class X");
  }
}
class Y extends X {
  static void staticMethod() {
    System.out.println("Class Y");
  }
}
public class MainClass {
  public static void main(String[] args) {
    Y.staticMethod();
  }
}
```

Output: Class Y
because method from inherited class is executed

5. What will be the output of this program?

```
class A {
   {
      System.out.println(1);
   }
}
class B extends A {
   {
      System.out.println(2);
   }
}
class C extends B {
   {
      System.out.println(3);
   }
}
public class MainClass {
   public static void main(String[] args) {
      C c = new C();
   }
}
```

Output:
1
2
3
because only object of inherited class is created

6. Is the below code written correctly? If yes, what will be the output?

```
class One {
   int x = 2121;
}
class Two {
   int x = 1212;
   Two() {
      System.out.println(x);
   }
   public class MainClass {
      public static void main(String[] args) {
         Two two = new Two();
      }
```

```
    }
```

Output will be error because in class two there is one curly bracket missing
But after correcting it output will be 1212 because object for class two is created