R N S RAJAPAKSHE 27058

Practical 04

1.

```java
public class TEmployee
 {
   public static void main(String[] args)
   {
       Employee ep1 = new Employee();
       ep1.setEpID(101);
       ep1.setEpName("Mr. Bogdan");
       ep1.setEpDesignation("Software Engineer");

       Employee ep2 = new Employee();
       ep2.setEpID(102);
       ep2.setEpName("Ms. Bird");
       ep2.setEpDesignation("HR Manager");

       System.out.println("Employee 1 Details:");
       System.out.println("ID: " + ep1.getEpID());
       System.out.println("Name: " + ep1.getEpName());
       System.out.println("Designation: " + ep1.getEpDesignation());

       System.out.println("\nEployee 2 Details:");
       System.out.println("ID: " + ep2.getEpID());
       System.out.println("Name: " + ep2.getEpName());
       System.out.println("Designation: " + ep2.getEpDesignation());
   }
}


public class Employee {
   private int epID;
   private String epName;
   private String epDesignation;

   public int getEpID() {
      return epID;
   }

   public void setEpID(int epID) {
      this.epID = epID;
   }
```

```java
    public String getEpName() {
        return epName;
    }

    public void setEpName(String empName) {
        this.epName = epName;
    }

    public String getEpDesignation() {
        return epDesignation;
    }

    public void setEpDesignation(String epDesignation) {
        this.epDesignation = epDesignation;
    }
}
```

2.
```java
class SuperB {
    int y;

    void setIt(int n) {
        y = n;
    }

    void increase() {
        y = y + 1;
    }

    void triple() {
        y = y * 3;
    }

    int returnIt() {
        return y;
    }
}

class SubC extends SuperB {
    void triple() {
        y = y + 3;
    }

    void quadruple() {
```

```java
            y= y* 4; // new method
        }
    }

    public class TInheritance
     {
       public static void main(String[] args)
      {
          SupB b = new SupB();
          b.setIt(2);
          b. increase();
          b.t riple();
          System.out.println(b.returnIt());

          SubC c = new SubC();
          c.setIt(2);
          c. increase();
          c.t riple();
          System.out.println(c.returnIt());
        }
    }
```

3.
```java
    // Person class
    class Person
     {
       private String name;
       private int id;

       public String getName() {
          return name;
       }

       public void setName(String name) {
          this.name = name;
       }

       public int getId() {
          return id;
       }

       public void setId(int id) {
          this.id = id;
       }
```

```java
    }

// Student class
class Student extends Person {
    private String course;
    public String getCourse() {
        return course;
    }

    public void setCourse(String course) {
        this.course = course;
    }
}


// Lecturer class
class Lecturer extends Person {
    private String programme;

    public String getProgramme() {
        return programme;
    }

    public void setProgramme(String programme) {
        this.programme = programme;
    }
}


// Test Class
public class TestPerson
{
    public static void main(String[] args)
    {
        Student s= new Student();
        S.setName("John Doe");
        s.setId(12345);
        s.setCourse("Computer Science");

        Lecturer l = new Lecturer();
        l.setName("Dr. Jane Smith");
        l.setId(98765);
        l.setProgramme("Software Engineering");
```

```java
            System.out.println("Student Details:");
            System.out.println("Name: " + s.getName());
            System.out.println("ID: " + s.getId());
            System.out.println("Course: " + s.getCourse());

            System.out.println("\nLecturer Details:");
            System.out.println("Name: " + l.getName());
            System.out.println("ID: " + l.getId());
            System.out.println("Programme: " + l.getProgramme());
        }
    }
```

4.
```java
public class Animal {}
public class Mammal extends Animal {}
public class Reptile extends Animal {}

public class Dog extends Mammal {
    public static void main(String args[]) {
        Animal an = new Animal();
        Mammal ma= new Mammal();
        Dog do = new Dog();
        System.out.println(ma instanceof Animal);
        System.out.println(do instanceof Mammal);
        System.out.println(do instanceof Animal);
    }
}
```