**TEST 4**

1. Create a base class called Shape with virtual functions area() and perimeter(). Derive two classes Rectangle and Triangle from the base class. Implement the area() and perimeter() functions for each class.

**PROGRAM**

import java .util.Scanner;

public class area

{

static public class Shape

{

Scanner scanner=new Scanner(System.in);

public void area()

{

System.out.println("Finding The Area For Shapes");

}

public void perimeter()

{

System.out.println("Finding Perimeter For Shapes");

}

}

static class Rectangle extends Shape

{

int length,breadth,area;

public void area()

{

System.out.print("Enter The Length Of The Rectangle:-");

length=scanner.nextInt();

scanner.nextLine();

System.out.print("Enter The Breadth Of The Rectangle:-");

breadth=scanner.nextInt();

scanner.nextLine();

area=length\*breadth;

System.out.println("The Area Of The Rectangle Is:-"+area);

}

public void perimeter()

{

System.out.println("The Perimeter Of The Rectangle Is:-"+2\*(length+breadth));

}

}

static class Triangle extends Shape

{

int base,height;

public void area()

{

System.out.print("Enter The Base Of The Triangle:-");

base=scanner.nextInt();

scanner.nextLine();

System.out.print("Enter The Height Of The Triangle:-");

height=scanner.nextInt();

scanner.nextLine();

int area=(base\*height)/2;

System.out.println("The Area Of The Triangle Is:-"+area);

}

public void perimeter()

{

System.out.println("The Perimeter Of The Triangle Is:-"+(base+height+height));

}

}

public static void main(String[] args)

{

Shape sp=new Shape();

Shape rct=new Rectangle();

Shape tri=new Triangle();

rct.area();

rct.perimeter();

tri.area();

tri.perimeter();

}

}

1. Create a base class called Animal with a virtual function move(). Derive two classes Bird and Fish from the base class. Implement the move() function for each class.

**PROGRAM**

public class animal

{

static class Animals

{

public void move()

{

System.out.println("The Animals Are Moving");

}

}

static class Fish extends Animals

{

public void move()

{

System.out.println("The Fishes Are Moving");

}

}

static class Birds extends Animals

{

public void move()

{

System.out.println("The Birds Are Moving");

}

}

public static void main(String[] args)

{

Animals aml=new Animals();

Animals fsh=new Fish();

Animals brd=new Birds();

fsh.move();

brd.move();

}

}

1. Create a base class called Person with a virtual function greet(). Derive two classes Student and Teacher from the base class. Implement the greet() function for each class

**PROGRAM**

public class persons

{

static class Person

{

public void greet()

{

System.out.println("The Persons Are Greeting Together");

}

}

static class Student extends Person

{

public void greet()

{

System.out.println("The Students Are Greeting The Teachers");

}

}

static class Teacher extends Person

{

public void greet()

{

System.out.println("The Teachers Are Greeting The Students");

}

}

public static void main(String[] args)

{

Person prs=new Person();

Person std=new Student();

Person tch=new Teacher();

std.greet();

tch.greet();

}

}