S.No: 24	Exp. Name: *program to create a super class called Figure that it returns the area of a rectangle and triangle*	Date:2023-11-07

Aim:

Write a java program to create a super class called Figure that receives the dimensions of two dimensional objects. It also defines a method called area that computes the area of an object. The program derives two sub-classes from Figure. The first is Rectangle and second is Triangle. Each of the sub classes override area() so that it returns the area of a rectangle and triangle respectively

Source Code:

AbstractAreas.java

```java
import java.util.*;
abstract class Figure{
    double dim1,dim2,dim3,dim4;
    Figure(double a,double b){
        dim1=a;
        dim2=b;
        dim3=a;
        dim4=b;
    }
    abstract void area();
}
class Rectangle extends Figure{
    Rectangle(double a,double b){
        super(a,b);
    }
    void area(){
        double Area=dim1*dim2;
        System.out.println("Rectangle:");
        System.out.println("Area is "+Area);
    }
}
class Triangle extends Figure{
    Triangle(double a,double b){
        super(a,b);
     }
void area(){
    double Area=(dim3*dim4)/2;
    System.out.println("Triangle:");
    System.out.println("Area is "+Area);
     }
}
class AbstractAreas{
    public static void main(String args[]){
        System.out.println("Enter lenght and breadth of Rectangle :");
        Scanner input=new Scanner(System.in);
        double dim1=input.nextDouble();
        double dim2=input.nextDouble();
        System.out.println("Enter height and side of Triangle :");
        Scanner input1=new Scanner(System.in);
        double dim3=input.nextDouble();
        double dim4=input.nextDouble();
        Rectangle r=new Rectangle(dim1,dim2);
```

```
        Triangle t=new Triangle(dim3,dim4);
        Figure figuref;
        figuref=r;
        figuref.area();
        figuref=t;
        figuref.area();
    }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter lenght and breadth of Rectangle : 12
14
Enter height and side of Triangle : 7
5
Rectangle:
Area is 168.0
Triangle:
Area is 17.5

Test Case - 2
User Output
Enter lenght and breadth of Rectangle : 4
8
Enter height and side of Triangle : 5
3
Rectangle:
Area is 32.0
Triangle:
Area is 7.5