S.No: 24	Exp. Name: ***program to create a super class called Figure that it returns the area of a rectangle and triangle***	Date:2023-11-08

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

```
import java.util.*;
abstract class Figure{
   double dim1;
   double dim2;
   double dim3;
   double 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=input1.nextDouble();
               double dim4=input1.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