S.No: 24	Exp. Name: ***program to create a super class called Figure that it returns the area of a rectangle and triangle***	Date:2023-11-05

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

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