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Lab-4

Ques: Develop a Java program to create an abstract class named Shape that contains two Integers and an empty method named printArea().

```
Import java.util.Scanner;
abstract class shape
{
  double a,b;
  abstract void printArea();
}
class rectangle extends shape{
  void data(double x,double y)
  {
     a=x;
     b=y;
  }
  void printArea()
  {
       system.out.println("Area of rectangle = " + (a*b));
  }
}
class triangle extends shape{
  void getdata(double x ,double y)
  {
     a=x;
     b=y;
  }
```

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```
    void printArea() {
    {
      double area = 0.5*a*b;
      system.out.println("Area of triangle = " + area);
    }
}
class circle extends shape {
    void getdata(double x)
    {
      a=x
    }
    void print area()
    {
      double area = 3.14*a*a;
      system.out.println("Area of circle = " + area);
    }
}
public class Main
{
  public static void (strings [] args)
    {
      Scanner scan = new Scanner(system.in);
      int ch;
      shape sf;
      rectangle r = new rectangle();
      triangle t = new triangle();
      circle c = new circle();
```

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```
System.out.println("\n1.Rectangle\n2. Triangle\n
                    3. Circle\n Enter your choice: ");
ch = scan.nextInt();
switch(ch)
{
  case1: System.out.println("Enter length and
                              breadth: ");
         double l = scan.nextDouble();
         double b = scan.nextDouble();
          r.getdata(l,b);
          r.printArea();
         break;

case 2: System.out.println("Enter base and height: ");
         double b1 = scan.nextDouble();
         double h = scan.nextDouble();
         t.getdata(b1,h);
         t.printArea();
         break;

case 3: System.out.println("Enter radius: ");
         double r1 = scan.nextDouble();
         c.getdata(r1);
         c.printArea()
         break;
default: System.out.println("Invalid input");
}
}
}
```

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Output:

1. Rectangle

2. Triangle

3. Circle

Enter your choice :

2.

Enter base and height:

3 4

Area of triangle = 6.0