

4. Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner;
class InputScanner {
    Scanner sc = new Scanner(System.in);
}
abstract class shape extends InputScanner {
    double a, b;
    abstract void getInput();
    abstract void displayarea();
}
class rectangle extends shape {
    void getInput() {
        System.out.println("Enter the length and breadth of the rectangle:");
        a = sc.nextDouble();
        b = sc.nextDouble();
    }
    void displayarea() {
        System.out.println("The area of rectangle is " + (a * b));
    }
}
```

```
class triangle extends shaped
```

```
void getinput()
```

```
{
```

```
System.out.println("Enter the base & height of  
a triangle:");
```

```
a = sc.nextDouble();
```

```
b = sc.nextDouble();
```

```
}
```

```
void displayarea()
```

```
{
```

```
System.out.println("The area of triangle is:" +  
(0.5 * a * b));
```

```
}
```

```
}
```

```
class circle extends shaped
```

```
void getinput()
```

```
{
```

```
System.out.println("Enter the radius of the circle:");
```

```
a = scsc.nextDouble();
```

```
}
```

```
void displayarea()
```

```
{
```

```
System.out.println("The area of circle is:" +  
(3.14 * a * a));
```

```
}
```

```
}
```

```
class Aread
```

```
public static void main(String args[])
```

```
{
```

```
shape ref;
```

```
ref = new rectangle();
```

```
ref.getinput();
```

```
ref.displayarea();
```

```
ref = new triangle();  
ref.getinput();  
ref.displayarea();
```

```
ref = new circle();  
ref.getinput();  
ref.displayarea();
```

```
}
```

Output:

Enter the length and breadth of the rectangle:

4 7

The area of rectangle is: 28

Enter the base and height of the triangle:

3 6

The area of triangle is: 9.0

Enter the radius of circle:

4

The area of circle is: 50.24

~~Qaw~~
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