

## WEEK 4 JAVA

### PROGRAM

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.

### CODE

```
abstract class shape {  
    double a,b;  
  
    shape(int x, int y)  
    {  
        a=x;  
        b=y;  
    }  
  
    abstract void printArea();  
}  
  
class rectangle extends shape{  
    rectangle(int x, int y)  
    {  
        super(x,y);  
    }  
  
    void printArea()  
    {  
        System.out.println("Area of rectangle is" +(a*b));  
    }  
}
```

```
class triangle extends shape{
triangle(int x, int y)
{
super(x,y);
}
void printArea()
{
System.out.println("Area of triangle is" +(0.5*a*b));
}
}
```

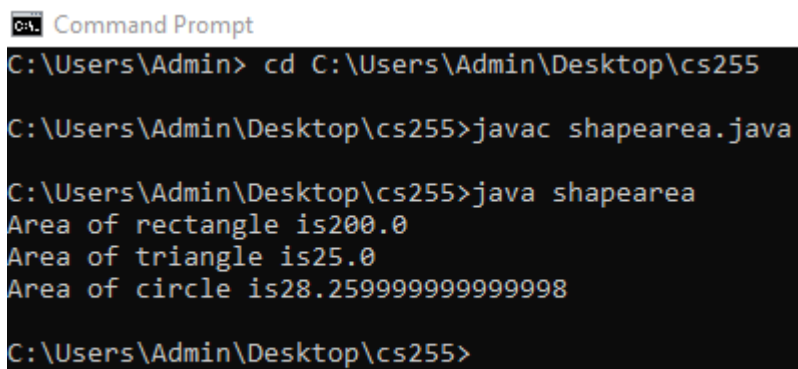
```
class circle extends shape{
circle(int x, int y)
{
super(x,y);
}
void printArea()
{
System.out.println("Area of circle is" +(3.14*a*a));
}
}
```

```
class shapearea{
public static void main(String args[])
{
rectangle r1= new rectangle(10,20);
triangle t1= new triangle(5,10);
circle c1= new circle(3,0);

shape r;
```

```
    r=r1;
    r.printArea();
r=t1;
    r.printArea();
r=c1;
    r.printArea();
}
}
```

## OUTPUT



The screenshot shows a Windows Command Prompt window with the title "Command Prompt". The user has navigated to the directory "C:\Users\Admin\Desktop\cs255". They have then executed the command "javac shapearea.java" to compile the Java file. Finally, they executed "java shapearea", which produced the following output: "Area of rectangle is200.0", "Area of triangle is25.0", and "Area of circle is28.259999999999998". The prompt is currently at "C:\Users\Admin\Desktop\cs255>".

```
C:\Users\Admin> cd C:\Users\Admin\Desktop\cs255
C:\Users\Admin\Desktop\cs255>javac shapearea.java
C:\Users\Admin\Desktop\cs255>java shapearea
Area of rectangle is200.0
Area of triangle is25.0
Area of circle is28.259999999999998
C:\Users\Admin\Desktop\cs255>
```