

WEEK 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 contains only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner;
```

```
abstract class Shape
```

```
{
    int a,b;
    Scanner x = new Scanner(System.in);
    void printArea(){}
}
```

```
class Rectangle extends Shape
```

```
{
    Rectangle()
    {
        System.out.println("Enter length and breadth:");
        a = x.nextInt();
        b = x.nextInt();
    }
    void printArea()
    {
        System.out.println("AREA: "+ a*b);
    }
}
```

```
class Circle extends Shape
```

```
{
```

```
Circle()
{
    System.out.println("Enter radius:");
    a = x.nextInt();
    b = x.nextInt();
}
void printArea()
{
    System.out.println("AREA: "+ 3.14*a*b);
}
}
```

```
class Triangle extends Shape
{
    Triangle()
    {
        System.out.println("Enter height and base:");
        a = x.nextInt();
        b = x.nextInt();
    }
    void printArea()
    {
        System.out.println("AREA: "+ (0.5*a*b));
    }
}
```

```
class Main {
    public static void main(String[] args) {
```

```
Rectangle r = new Rectangle();  
Circle c = new Circle();  
Triangle t = new Triangle();  
t.printArea();  
c.printArea();  
r.printArea();  
}  
}
```

```
C:\Users\G Sai Madhav\Desktop\00J\JAVA PROGRAMS\5TH JAVA PROGRAM>javac Main.java  
C:\Users\G Sai Madhav\Desktop\00J\JAVA PROGRAMS\5TH JAVA PROGRAM>java Main  
Enter length and breadth:  
5  
6  
Enter radius:  
5  
5  
Enter height and base:  
5  
6  
AREA: 15.0  
AREA: 78.5  
AREA: 30
```