

```
1  import java.util.Scanner;
2
3  abstract class Shape{
4      double a,b;
5      abstract void printArea();
6  }
7
8  class Rectangle extends Shape{
9      void printArea(){
10         System.out.println("Area of rectangle is "+ (a*b));
11     }
12 }
13
14 class Triangle extends Shape{
15     void printArea(){
16         System.out.println("Area of triangle is "+ (0.5*a*b));
17     }
18 }
19
20 class Circle extends Shape{
21     void printArea(){
22         System.out.println("Area of circle is "+ (3.14*a*a));
23     }
24 }
25
```

```
26 class Shapearea {
    Run | Debug | Run main | Debug main
27     public static void main(String args[]) {
28         int n;
29         Rectangle r = new Rectangle();
30         Triangle t = new Triangle();
31         Circle c = new Circle();
32         while (true) {
33             Scanner s1 = new Scanner(System.in);
34             System.out.println(x: "\nMAIN MENU\nSelect shape\n1. Rectangle\n2. Triangle\n3. Circle\n4. Exit\nEnter Choice:");
35             n=s1.nextInt();
36             switch(n){
37                 case 1:
38                 {
39                     System.out.println(x: "Enter length: ");
40                     r.a= s1.nextDouble();
41                     System.out.println(x: "Enter breadth: ");
42                     r.b= s1.nextDouble();
43                     r.printArea();
44                     break;
45                 }
46                 case 2:
47                 {
48                     System.out.println(x: "Enter height: ");
49                     t.a= s1.nextDouble();
50                     System.out.println(x: "Enter base: ");
51                     t.b= s1.nextDouble();
52                     t.printArea();
53                     break;
54                 }
55                 case 3:
56                 {
57                     System.out.println(x: "\nEnter radius: ");
58                     c.a= s1.nextDouble();
59                     c.printArea();
60                     break;
61                 }
62                 case 4:
63                 {
64                     System.out.println(x: "Program Terminated");
65                     System.exit(status: 0);
66                 }
67
68                 default: System.out.println(x: "Invalid input");
69             }
70         }
71     }
72 }
```

```
PS C:\Users\student\Desktop\1BM24CS336> cd "c:\Users\student\Desktop\1BM24CS336\" ; if ($?) { javac Shapearea.java } ; if ($?) { java Shapearea }
```

MAIN MENU

Select shape

1. Rectangle
2. Triangle
3. Circle
4. Exit

Enter Choice:

1

Enter length:

12

Enter breadth:

20

Area of rectangle is 240.0

MAIN MENU

Select shape

1. Rectangle
2. Triangle
3. Circle
4. Exit

Enter Choice:

2

Enter height:

16

Enter base:

24

Area of triangle is 192.0

MAIN MENU

Select shape

1. Rectangle
2. Triangle
3. Circle
4. Exit

Enter Choice:

3

Enter radius:

7

Area of circle is 153.86

MAIN MENU

Select shape

1. Rectangle

2. Triangle

3. Circle

4. Exit

Enter Choice:

5

Invalid input

MAIN MENU

Select shape

1. Rectangle

2. Triangle

3. Circle

4. Exit

Enter Choice:

4

Program Terminated

PS C:\Users\student\Desktop\1BM24CS336> █