

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