

```
import java.util.Scanner;

abstract class Shape
{
    double a,b;
    abstract void printArea();
}

class Rectangle extends Shape
{
    void printArea()
    {
        System.out.println("Area of rectangle is " + (a*b));
    }
}

class Triangle extends Shape
{
    void printArea()
    {
        System.out.println("Area of triangle is " + (0.5*a*b));
    }
}

class Circle extends Shape
{
    void printArea()
    {
        System.out.println("Area of Circle is " + (3.14*a*a));
    }
}

class ShapeArea
{
    public static void main(String args[])
    {
        int choice;
        Rectangle r = new Rectangle();
        Triangle t = new Triangle();
        Circle c = new Circle();

        while(true)
        {
```

```
Scanner scanner = new Scanner(System.in);
System.out.println("\nMAIN MENU\nSelect
Shape\n1.Rectangle\n2.Triangle\n3.Circle\n4.Exit\nEnter Choice");
choice = scanner.nextInt();

switch(choice)
{
    case 1:
    {
        System.out.println("Enter Length");
        r.a=scanner.nextDouble();
        System.out.println("Enter Breadth");
        r.b=scanner.nextDouble();

        r.printArea();
        break;
    }

    case 2:
    {
        System.out.println("Enter Length");
        t.a=scanner.nextDouble();
        System.out.println("Enter Breadth");
        t.b=scanner.nextDouble();

        t.printArea();
        break;
    }

    case 3:
    {
        System.out.println("Enter Radius");
        c.a=scanner.nextDouble();

        c.printArea();
        break;
    }

    case 4:
    {
        System.exit(0);
    }
default: System.out.println("Invalid Input!!");
```

```
        }
    }
}
```

OUTPUT:

```
MAIN MENU
Select Shape
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Choice
1
Enter Length
20
Enter Breadth
30
Area of rectangle is 600.0
```

```
MAIN MENU
Select Shape
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Choice
3
Enter Radius
10
Area of Circle is 314.0
```

```
MAIN MENU
Select Shape
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Choice
20
Invalid Input!!
```

MAIN MENU
Select Shape
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Choice
2
Enter Length
10
Enter Breadth
20
Area of triangle is 100.0

MAIN MENU
Select Shape
1.Rectangle
2.Triangle
3.Circle
4.Exit
Enter Choice
4