

```
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