



Lab 12 – “I’m so Classy, You Already Code”

1. Create a parent class called Shape (2 points). The Shape class will have three subclasses: Circle (2 points), Rectangle (2 points), and Triangle (2 points). You will also create a Lab12 class (4 points) where your main method will be.
 - Lab12
 - Methods:
 - `public static void main(String[] args)`
 - `public static Shape addNewShape(Shape s)`
 - `public static void print(Shape myshapes[], int option)`
 - Shape
 - Should have an instance variable called color
 - Constructor
 - Methods:
 - `public String getColor()`
 - `public double calculateArea()`
`//You will override this method`
 - Circle
 - Extends Shape
 - Should have a variable called radius
 - Constructor
 - Methods:
 - `public String toString()`
`//Use stringBuilder`
 - `public double calculateArea()`
 - Rectangle
 - Extends Shape
 - Should have variables called height and width
 - Constructor
 - Methods:
 - `public String toString()`
`//Use stringBuilder`
 - `public double calculateArea()`

- Triangle
 - Extends Shape
 - Should have variables called base and height
 - Constructor
 - Methods:
 - `public String toString()`
 `//Use stringBuilder`
 - `public double calculateArea()`

In main:

1. Make array size initialized to 10 or higher.
2. Ask user how many shapes to make.
3. Make that many shapes taking in user input.
4. Continually print a main menu with options to get different shapes info, add another shape or exit.

Do not worry about checking for bad input.

Example:

How many shapes do you want to create?

3

What shape do you want to make (1=circle, 2=rectangle, 3=triangle)?

1

What color is this circle?

Red

What's the radius?

5

What shape do you want to make (1=circle, 2=rectangle, 3=triangle)?

2

What color is this rectangle?

Yellow

What's the height?

4

What's the width?

6

What shape do you want to make (1=circle, 2=rectangle, 3=triangle)?

3

What color is this triangle?

Blue

What's the height?

8

What's the base?

2

Select an option:

1. Display info for circles
2. Display info for rectangles
3. Display info for triangles
4. Add another shape
5. Exit

1

Circle 1's Info:

Color: Red

Radius: 5

Area: 78.53981633974483

Select an option:

1. Display info for circles
2. Display info for rectangles
3. Display info for triangles
4. Add another shape
5. Exit

4

What shape do you want to make (1=circle, 2=rectangle, 3=triangle)?

1

What color is this circle?

Green

What's the radius?

12

Select an option:

1. Display info for circles
2. Display info for rectangles
3. Display info for triangles
4. Add another shape
5. Exit

1

Circle 1's Info:

Color: Red

Radius: 5

Area: 78.53981633974483

Circle 2's Info:

Color: Green

Radius: 12

Area: 452.3893421169302

Select an option:

1. Display info for circles
2. Display info for rectangles
3. Display info for triangles
4. Add another shape
5. Exit

5

Good bye