

LAB211Assignment

Type:
Code:
LOC:
Slot(s):

Short Assignment
J1.S.P0061
42
1

Title

Create a program to calculate perimeter and area.

Background

N/A

Program Specifications

Create a program to calculate the perimeter and the area of a Circle, a Rectangle and a Triangle.

Function details:

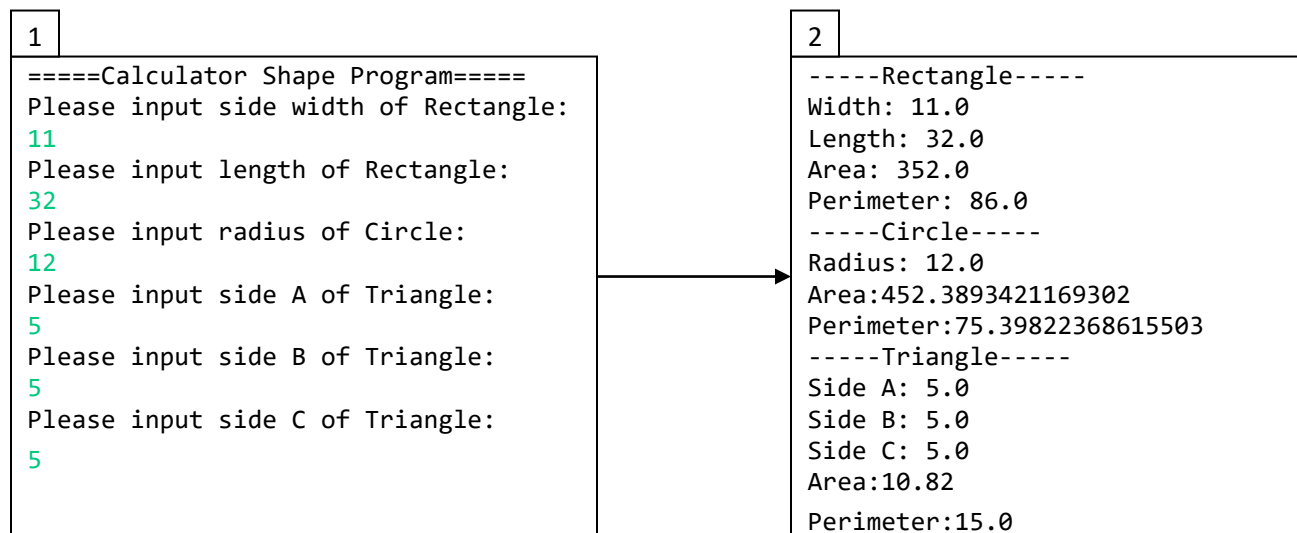
Function 1: Display GUI And Input Data.

- Users run the program. The program prompts users for the input Data.
- Auto next **Function2**.

Function 2: Perform function

- The program calculates the area and the perimeter of the input circle, the rectangle and the triangle
- Display the information on the screen and Exit the program.

Expectation of User interface:



Guidelines

Student must implement the methods

- getPerimeter
- getArea
- printResult

in startup code.

Example:

- Create an abstract class Shape contains three methods printResult, getPerimeter and getArea.
- Create classes Triangle, Rectangle, Circle that extend from class Shape.
- Construct the shapes that consists the properties of a circle (radius), a rectangle (width, length), a triangle (sideA, sideB, sideC) and generate their getter and setter methods.
- Override the methods of the Shape class.
- Calculate the area of a Triangle using the formula Heron:

$$S = \sqrt{p(p-a)(p-b)(p-c)}$$

Use Math.sqrt()

- Calculate the area of a circle with $\text{Pi} = \text{Math.PI}$

Function 1: Calculate the perimeter

- Must create function: `public double getPerimeter ()`
 - Return: the perimeter of the shape.

Function 2: Calculate the area.

- Must create function: `public double getArea ()`
 - Return: The area of the shape.

Function 3: Display the shape information.

- Must create the function: `public void printResult ()`
 - Return: void.