Hands-on Exercise Objective

After completing the hands-on exercises, you will be able to:

- Develop simple Java program using if-else if - else statement.

Problem Statement:

Develop classes named **"Circle", "Square"**, and **"Triangle"** .Each class should have a method named calculateArea() which calculates the area based on the below logic and display the appropriate message

Class Name	Method Name	Variable Name	Variable Type	Logic
Circle	calculateArea	Radius	int	3.14 *radius * radius
Triangle	calculateArea	Sides	int	0.433 * sides * sides
Square	calculateArea	Sides	int	sides * sides

Develop a class "***Shapes***" inside a package "***com.cognizant.shapes***". The class should have one instance variables of type int named ""numberOfSides" and a method called calculateShapeArea***().*** This method takes two arguments one for identifying the shape and other for side length.

This method should identify the shape based on the numberOfSides and calculate the area and print it in console as follows

If numberOfSides is 1 then invoke the "calculateArea" of the Circle Object.

This method will also display the following message in the console.

"The Area of the Circle is"<area>

If numberOfSides is 3 then invoke the "calculateArea" of the Triangle Object.

This method will also display the following message in the console.

"The Area of the Triangle is"<area>

If numberOfSides is 4 then invoke the "calculateArea" of the Square Object.

This method will also display the following message in the console.

"The Area of the Square is"<area>

If numberOfSides is other than the specified ones then display the message "No Shapes Present".

Note: <area> - The value would be printed based on the above logics of different shapes such as Circle, Triangle and Square.

In the Shapes class add a main method which sets the values and invoke the following methods in the ***Shapes*** object.

Test Case 1: Specify the following values and run the main method

1. Set the value of numberOfSides as 3 and sideLength as 12**.**
2. Invoke the method calculateShapeArea ().

Expected Output: The following messages should be displayed in the console

The Area of the Triangle is 62.3538

Test Case 2: Specify the following values and run the main method

1. Set the value of numberOfSides as 4 and sideLength as 15**.**
2. Invoke the method calculateShapeArea ().

Expected Output: The following messages should be displayed in the console

The Area of the Square is 225

Test Case 3: Specify the following values and run the main method

1. Set the value of numberOfSides as 5 and sideLength as 15**.**
2. Invoke the method calculateShapeArea().

Expected Output: The following messages should be displayed in the console

No Shapes Present