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| 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. |

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| 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 |