Week 3 assignment on: **Java Basics**

 Configuration

1. Install JDK 1.8 or greater
2. Set JAVA\_HOME environment variable
3. Down load and install latest eclipse –IDE.

|  |
| --- |
| 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: 1 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.sapient.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 |

**Solve the below problem statements: (below classes should not have main method. A separate class should have main method to execute the below classes).**

1. Write a java class to read n numbers from command line argument and display sum, avg and biggest and smallest.
   1. Class name : Command\_Line1
   2. Methods : setData, calData, displayData.
2. Write a java class to read n numbers from key board and display all the numbers, sort the number, and do search.
   1. Class name : KeyRead\_Line2
   2. Methods :Read, display, sort, find
3. Writ a java class which has static method fig\_to\_words which takes amount a long and converts figure to words and return a string.
   1. Example input is 132 the output should be one hundred and thirty two only.