**ScaleneTriangle.java**

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This is a Class that takes the input of a Scalene triangle and calculates the Area and the Perimeter

public class ScaleneTriangle extends CommonFunctions

**Overview**:

* + 1. This class:
    2. Askes user for side A, side B and side C.
    3. Stores the entered values
    4. Calculates Area
    5. Calculates Perimeter
    6. Displays the Triangle

**Class Constants:**

enum Choices

SETSIDES: Enter the 3 sides needed to make the triangle.

PERIMETER: Calculate the Perimeter of the triangle.

AREA: Calculate the Area of the triangle.

DISPLAY: Display the triangle that was entered by the user.

GOBACK: End the scalene triangle program and return to the main menu

**Public Variables:**

None

**Private Instance Variables:**

private double legA: Side or leg of triangle

private double legB: Side or leg of triangle

private double legC: Side or leg of triangle

private double base: Not used

private Choices choices: Used to hold the user input for the menu

private Scanner keyboard: Used to get input from the user

**Constructors:**

public ScaleneTriangle(Scanner keyboard) {

this.keyboard = keyboard;

legA = legB = legC = base = 0;)

**shapeName**: The text to be shown in the title bar of the JFrame window.

**graph**: class instance reference obtained from a call to the Graph constructor.

**Public Methods:**

public void QueryUser(): Used to get input and set it to the enumerated choices passed to ProccessCommand()

public void ProcessCommand(): Used to process the users input and output results.

public boolean goback(): Used to stop the program and return to the menu.

**Private Methods:**

None

**Test Interface/Sample:**

The main function of the class is to get user input and process a scalene triangle, this is done under ProcessCommand() and mainly relies on algebra:

case PERIMETER:

if (legA != 0 && legB != 0 && legC != 0) {

double Perimeter = legA + legB + legC;

System.out.println("Side 1 + Side 2 + Side 3 = " + Perimeter + "\n" +

case AREA:

if (legB != 0 && legA != 0 ) {

double s;

s = ((legA + legB + legC) / 2);

double area;

area = Math.sqrt(s \* ( s - legA) \* (s - legB) \* (s - legC));

System.out.println(" Area = height \* b / 2 = " + area + "\n");

// "\u221A3/4 \* side^2 = \u221A3/4 \* " + legA + "^2 = " + (Math.sqrt(3)/4 \* (legA \* legA)) + " units^2");