

Geometry Quadrilaterals Lab

Part 1

In this part of the lab we will use the geometric concepts about the Quadrilateral, Trapezoid, Parallelogram, Rhombus, Rectangle, and Square classes ~~to draw an UML diagram~~ to show the superclass and subclasses relationship. There is NO NEED to have method to calculate the perimeter and area of any shape. ~~The UML diagram must include:~~

- ~~1) Instance variables (including but not limited to such as angles, length of each sides, two Boolean variables to describe that the opposites are parallel or not.)~~
- ~~2) The functions (including but not limited to such as getters/setters, validating function to check if the information in instance variables could form a valid geometric shape.)~~

(this is the “Class Design” practice)

Part 2

In this part of the lab we will implement the Quadrilateral, Trapezoid, Parallelogram, Rhombus, Rectangle, and Square classes based on the ~~UML diagram in part 1~~. ~~Tester class is not necessary at this Hybrid Learning time.~~

(this is the “Code Implementation” practice)

Suggested Interfaces

```
public class Quadrilateral {  
    public static final Integer NUM_SIDES = 4;  
    public static final Double SUM_INTRL_ANGLE = 360;  
    protected String name;  
    protected Double[ ] angleMeasures;  
    protected Double[ ] sideLengths;  
    protected boolean[ ] oppSidesParallel;  
    constructors with/without parameters;  
    public getters/setters {  
    }  
}
```

```
    public boolean checkAngleMeasure( ) {  
    }  
    public boolean isValidShape( ) {  
    }  
}
```