AP Computer Science	Inheritance Lab Java Assignment
Quadrilaterals Lab	100 Point Versions

Assignment Purpose:

The purpose of this lab assignment is for you to gain an understanding of the power of inheritance. You will create several objects that are based on the definition of another object.

In this lab you are going to be creating and drawing different kinds of quadrilaterals. All quadrilaterals have similar properties but are found in different ways. We will be exploring those similarities and differences as described below

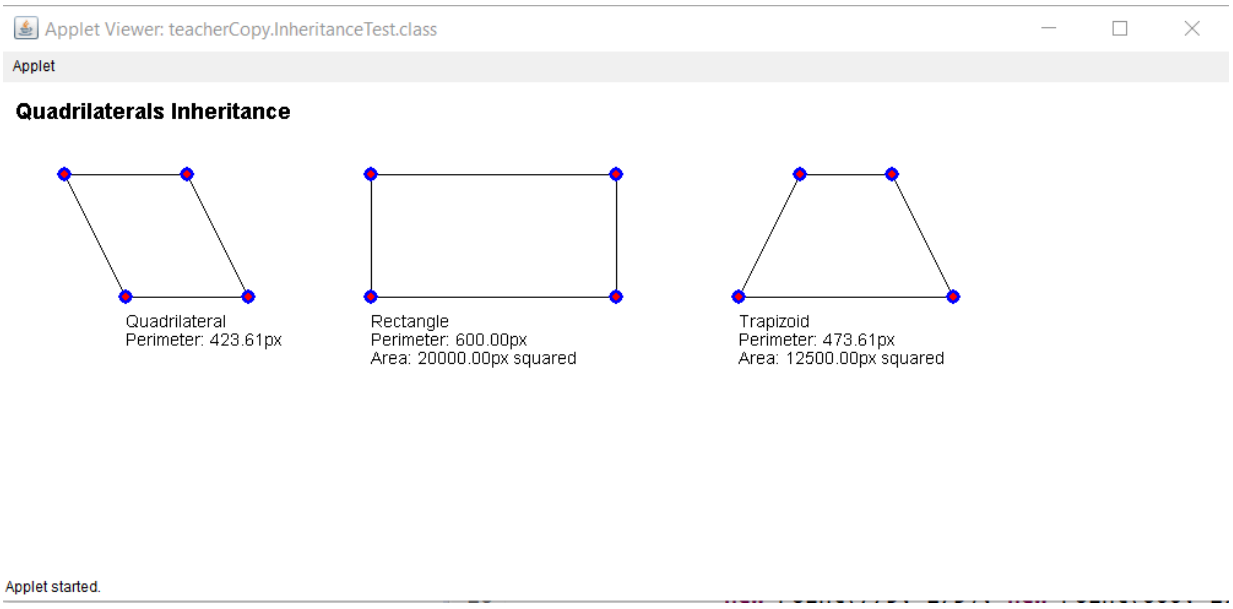
What You're Starting With:

You will begin with two starter files, Point.java and InheritanceTest.java.

Class Point has the following attributes and methods

- private integers x and y to store location of the point
- public get/set methods
- public drawPoint - draws the point at the specified location
- public getDistanceFrom(Point otherPoint) - will return a double value representing the distance from the Point it is called from and the Point passed as an argument

Class InheritanceTest is a test file that creates each of the 3 objects you are to define and tests each of the methods you will be asked to define. Uncomment each of the commands for each shape you'd like to test. Once completed your output should look as it does below.



What You Need To Do:

You need to create three new classes, Quadrilateral, Rectangle and Trapezoid, with the qualifications below.

class Quadrilateral:

- 4 private Point Attributes p1, p2, p3, and p4. Where p1 is the top left, p2 is the top right, p3 is the lower right, and p4 is the lower left corner.
- 1 String attribute name
- A constructor that will accept 4 points as arguments to be used in p1 - p4 order, and set the name appropriately
- Get and Set methods for all attributes
- drawQuadrilateral(Graphics g) method that will draw all the points and connect them with a line
- getPerimeter() method that will return a double value that represents the perimeter of the shape rounded to 2 decimal places
- displayInfo() method that will display the name and perimeter of the shape below the lower left corner of the shape.

class Rectangle (is a Quadrilateral)

- No additional attributes
- constructor that will set all attributes of the super class
- getArea method that will return a double that represents the area of the rectangle rounded to 2 decimal points
- displayInfo() method that overrides the displayInfo method of the super class to include the area information

class Trapezoid (is a Quadrilateral)

- No additional attributes
- constructor that will set all attributes of the super class
- getArea method that will return a double that represents the area of the trapezoid rounded to 2 decimal points
- displayInfo() method that overrides the displayInfo method of the super class to include the area information