

Advanced Programming (Java) QAP3

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SD12

NOTE: Each Java class is labeled with the problem that is being solved with the particular class (ex: Student.Java is for Problem #1). In the case of classes such as Triangle.java, they are part of the solution for both problems #3, and #4.

The test classes are as follows...

- Demo.java (Problem #1)
- PointDemo.java (Problem #2)
- ShapeDemo.java (Problem #3)
- ScalableDemo.java (Problem #4)

Questionnaire

1. This assignment took me approximately 5 hours total, including review and concept solidification.
2. To complete this assignment, I utilized W3Schools, Ainee's lecture notes, and StackOverflow
3. N/A
4. N/A
5. These problems were pretty approachable. Continuing to write similar programs will help hammer the concepts of abstract classes home. Understanding the concept of an interface took a while.

Problem #1 (From Demo.java)

```
PROBLEMS 14 OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 10 Filter (e.g. text, !exclude, \escape)
Jalen Green, age: 22, my gender: M
Alperen Sengun, age: 22, my gender: M, ID: LA85129, GPA: 4.0
Clyde Drexler, age: 62, my gender: M, Subject: Coaching Psychology, Salary: $50000.0
Ashley Williams, age: 35, my gender: F, ID: PLB123, GPA: 3.0, major: English, year: 1
```

Problem #2 (From PointDemo.java)

```
PROBLEMS 10 OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 10 Filter (e.g. text, !exclude, \escape)
Point: (1.2, 2.9)
Before moving: (1.1, 3.4), speed = (0.9, 1.0)
After moving: (2.0, 4.4), speed = (0.9, 1.0)
```

Problem #3 (From ShapeDemo.java)

```
PROBLEMS 10 OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 10 Filter (e.g. text, !exclude, \escape)
Circle - Area: 254.46900494077323, Perimeter: 56.548667764616276
Ellipse - Area: 9.42477796076938, Perimeter: 18.84955592153876
Triangle - Area: 6.0, Perimeter: 12.0
Triangle - Area: 35.074028853269766, Perimeter: 27.0
```

Problem #4 (From ScalableDemo.java)

```
PROBLEMS 13 OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 10 Filter (e.g. text, !exclude, \escape)

Before Scaling:
Circle - Area: 78.53981633974483, Perimeter: 31.41592653589793, Radius: 5.0
Ellipse - Area: 25.132741228718345, Perimeter: 50.26548245743669, Major Axis: 4.0, Minor Axis: 2.0
Triangle - Area: 6.0, Perimeter: 12.0, Triangle with sides: 3.0, 4.0, and 5.0
Triangle - Area: 6.928203230275509, Perimeter: 12.0, Triangle with sides: 4.0, 4.0, and 4.0[Equilateral]

After Scaling:
Circle - Area: 314.1592653589793, Perimeter: 62.83185307179586, Radius: 10.0
Ellipse - Area: 100.53096491487338, Perimeter: 201.06192982974676, Major Axis: 8.0, Minor Axis: 4.0
Triangle - Area: 24.0, Perimeter: 24.0, Triangle with sides: 6.0, 8.0, and 10.0
Triangle - Area: 27.712812921102035, Perimeter: 24.0, Triangle with sides: 8.0, 8.0, and 8.0[Equilateral]
```