# QAP 3 Review

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## How many hours did it take you to complete this assessment?

I spent approximately **8 to 9 hours** completing this assessment. This includes time spent reviewing lectures, referencing old notes, and figuring out the implementation.

## What online resources have you used?

For this assessment, I mainly relied on my old notes and class materials. My notes helped me recall key concepts about interfaces and abstract classes, while the class examples provided a solid foundation.

## Did you ask any friends for help?

Yes, I discussed some parts of the assessment with Noah Devine. We talked about general assignment guidelines and the theory behind how to complete it.

## Did you ask an instructor for help? If so, how many questions did you ask?

Nope!

## Rate the difficulty of each question and your confidence level

Overall, I found the assessment moderately challenging, particularly in modifying the shape classes to implement `Scalable`. However, after completing this task, I feel confident that I can handle similar problems involving interfaces, abstract classes, and method overriding in the future

Screenshots of code

1)

```
● Conor McGregor, age: 35, gender: M
  Israel Adesanya, age: 34, gender: M, ID: MMA001, GPA: 3.8
  Khabib Nurmagomedov, age: 36, gender: M, subject: Wrestling, salary: $65999.0
  Jon Jones, age: 36, gender: M, ID: MMA002, GPA: 3.9, Year: 4, Major: Sports Science
```

2)

```
● p1: (3.5,5.5)
  mp1 (before move): (13.0,13.0), speed=(2.0,6.0)
  mp1 (after move): (15.0,19.0), speed=(2.0,6.0)
  mp2 (before move): (6.0,7.0), speed=(1.5,1.5)
  mp2 (after move): (7.5,8.5), speed=(1.5,1.5)
○ PS C:\Users\chris\Desktop\School Files\Semister3\AdvProgrammigJava\QAP3\problem-2>
```

3)

```
●
  Ellipse - Area: 75.39822368615503, Perimeter: 30.038084488828183
  Circle - Radius: 5.0, Area: 78.53981633974483, Perimeter: 31.41592653589793
  Triangle - Area: 6.0, Perimeter: 12.0
  Equilateral Triangle - Side: 6.0, Area: 15.588457268119896, Perimeter: 18.0

○ PS C:\Users\chris\Desktop\School Files\Semister3\AdvProgrammigJava\QAP3\problem-3>
```

4)

```
● Original Shapes:
  Circle - Radius: 15.0, Area: 706.8583470577034, Perimeter: 94.24777960769379
  Triangle - Area: 9.56229574945264, Perimeter: 19.0
  Ellipse - Area: 43.982297150257104, Perimeter: 19.844676015002406
  Equilateral Triangle - Side: 4.0, Area: 6.928203230275509, Perimeter: 12.0

  Shapes after scaling by factor of 2.0:
  Circle - Radius: 30.0, Area: 2827.4333882308138, Perimeter: 188.49555921538757
  Triangle - Area: 38.24918299781056, Perimeter: 38.0
  Ellipse - Area: 175.92918860102841, Perimeter: 14.689352030004812
  Equilateral Triangle - Side: 8.0, Area: 27.712812921102035, Perimeter: 24.0
○ PS C:\Users\chris\Desktop\School Files\Semister3\AdvProgrammigJava\QAP3\problem-4>
```