QAP 2 – Advanced Programming (Java)
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Due: February 13th

1. **How many hours did it take you to complete this assessment? (Please keep try to keep track of how many hours you have spent working on each individual part of this assessment as best you can - an estimation is fine; we just want a rough idea.)**

Answer: This assessment took me about 8 – 14 hours to do as I had to rewatch some previous lectures and go through some notes as a refresher.

2. **What online resources you have used? (My lectures, YouTube, Stack overflow etc.)**

Answer: I mainly used previous lectures, notes, and previous examples to complete these questions. All though I did need to use tutorialspoint.com for the equals() method and W3 schools for the compareTo() method.

3. **Did you need to ask any of your friends in solving the problems. (If yes, please mention name of the friend. They must be amongst your class fellows.)**

Answer: I asked Laura Wiseman a question about formatting toString methods but other than that, no.

4. **Did you need to ask questions to any of your instructors? If so, how many questions did you ask (or how many help sessions did you require)?**

Answer: I needed to ask Dr. Malik a few questions for clarification on some problems for the QAP, but that's about it.

5. **Rate (subjectively) the difficulty of each question from your own perspective, and whether you feel confident that you can solve a similar but different problem requiring some of the same techniques in the future now that you've completed this one.**

Answer: I found question one to be straight forward, maybe an 8/10. Question two I would rate about a 6/10 as I had trouble understanding the requirements at first. After I understood what I needed to do, it felt a little straight forward. The final question took me the longest and was a little more challenging which is why I'd also give that a 6/10. With additional practice, I believe I could solve similar problems in the future.

Output Screenshots
(Question 1-3 in that order)

```
noahdevine@MacBookAir QAP2 %  /usr/bin/env /Library/Java/JavaVirtualMachines/amazon-corretto-11.jdk/Contents/Home/bin/java -cp /Users/noahdevine
/Library/Application\ Support/Code/User/workspaceStorage/ef2547560ef9eba4d84228cddbc5a319/redhat.java/jdt_ws/QAP2_6619143a/bin TestMyLine
Begin = (2,6),End = (4,8)
Begin = (3,6),End = (5,8)
(2,6)
Begin = (3,6),End = (4,8)
(4,8)
Begin = (3,6),End = (5,8)
3
Begin = (2,6),End = (5,8)
6
Begin = (2,6),End = (5,8)
5
Begin = (2,6),End = (4,8)
8
Begin = (2,6),End = (4,9)
[2, 6]
Begin = (3,6),End = (4,9)
[4, 9]
Begin = (3,6),End = (5,10)
4.47213595499958
1.1071487177940904
Begin = (3,6),End = (5,10)
noahdevine@MacBookAir QAP2 %
```

```
noahdevine@MacBookAir QAP2 %  /usr/bin/env /Library/Java/JavaVirtualMachines/amazon-corretto-11.jdk/Contents/Home/bin/java -cp /Users/noahdevine
/Library/Application\ Support/Code/User/workspaceStorage/ef2547560ef9eba4d84228cddbc5a319/redhat.java/jdt_ws/QAP2_6619143a/bin TestMyRectangle
New rectangle: Rectangle:  Top Left = (4,6) Bottom right = (2,4)
(4,6)
4
6
(2,4)
2
4
Rectangle:  Top Left = (8,9) Bottom right = (2,4)
Rectangle:  Top Left = (1,9) Bottom right = (2,4)
Rectangle:  Top Left = (1,4) Bottom right = (2,4)
Rectangle:  Top Left = (1,4) Bottom right = (6,8)
Rectangle:  Top Left = (1,4) Bottom right = (5,8)
Rectangle:  Top Left = (1,4) Bottom right = (5,1)
4
3
12
14
Rectangle:  Top Left = (1,4) Bottom right = (5,1)
noahdevine@MacBookAir QAP2 %
```

```
noahdevine@MacBookAir QAP2 %  /usr/bin/env /Library/Java/JavaVirtualMachines/amazon-corretto-11.jdk/Contents/Home/bin/java -cp /Users/noahdevine/Library/Applica
tion\ Support/Code/User/workspaceStorage/ef2547560ef9eba4d84228cddbc5a319/redhat.java/jdt_ws/QAP2_6619143a/bin CreditCardDemo
Diane Christie, 237J Harvey Hall, Menomonie, WI 54751
Balance: $0.00
Credit Limit : $1000.00

Attempt to charge $200.00
Charge: $200.00
Balance : $200.00
Attempt to charge $10.02
Charge: $10.02
Balance : $210.02
Attempt to pay $25.00
Payment: $25.00
Balance : $185.02
Attempt to charge $990.00
Exceeds credit limit
Balance : $185.02
noahdevine@MacBookAir QAP2 %
```

Question #2 Class Diagram

MyRectangle
-topLeft:MyPoint -bottomRight:MyPoint
+MyRectangle(topLeft:MyPoint, bottomRight:MyPoint) +getTopLeft():MyPoint +getTopLeftX():int +getTopLeftY():int +getBottomRight():MyPoint +getBottomRightX():int +getBottomRightY():int +setTopLeftXY(x:int, y:int):void +setTopLeftX(x:int):void +setTopLeftY(y:int):void +setBottomRightXY(x:int, y:int):void +setBottomRightX(x:int):void +setBottomRightY(y:int):void +getWidth():int +getHeight():int +getArea():int +getPerimeter():int +toString():String