**Unit 1: Primitive Types**

**Topic 5 Lab 2: Partner Programming Challenges!**

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| **Name:** |  |

This is a **pair programming** lab: you and your partner should code together in the **same** Replit project, just like if you were both typing in a shared Google Doc!

**Each partner should submit their own version of this Google Doc, but you and your partner should have copied/pasted the same code!**

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| **Setup** |
| **Follow the instructions below to create a collaborative Replit for you and your partner.**    Choose **ONE** partner to:   1. Open up the  team project. 2. Click:  on the right 3. Click **Add Group**:      1. Click **OK**:      1. Click **Confirm** to allow notifications (if this pop up appears).   After the first partner completes the steps above, the **OTHER** Partner should:   1. Open up the  team project. 2. Click:  on the right 3. Locate and **Join** the group *started by your partner!* Make sure you select the right one (if you accidentally join the wrong group, let Mr. Miller know):     ***Once both partners are in, both partners will be coding alongside each other!*** |

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| **NOTE!** For some of these challenges, you might need to use an if-else **selection statement**. We will discuss this statement and Boolean logic in depth in the future, but for now, here is the syntax and an example:  **if-else statement example**  **This is a "2 way branch" -- *either one branch or the other will execute (but never both)***   |  | | --- | | int x = 3;  System.out.println("Hello!");  if (x > 4) {  System.out.println(x + " is greater than 4!");  } else {  System.out.println(x + " is not greater than 4!");  }  System.out.println("Goodbye!"); | |

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| **Programming Challenge 1: Test Average Calculator**    Write a program to accept 4 integer test scores from the user (e.g. 75, 80, 82, and 90) and also accept an integer “passing score” value (e.g. 65).  Have your program print the four test scores (as integers), as well as calculate and print the average of the test scores (as a double). Then print a message to the user that informs them if the average test score is passing or not.  *Don't forget about casting!*  **Example 1:**    **Example 2:** |
| **Copy your program’s code from Replit and paste it below:**  (use the Courier New font for code-style!) |

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| **Programming Challenge 2: Stock Market!**    **Comment out or delete the code you wrote for the first problem.**  Write a program to accept the following three things from the user:   * a stock "ticker symbol" (for example, "GOOGL" or "AAPL" or "GE") * how many shares of that stock the user owns (assume whole number shares), for example 8 or 125 or 2000 * the change in value of the stock price for that day as a positive or negative decimal (for example, entering 12.75 indicates that the stock *increased* in value by $12.75 per share, and entering **-**7.59 indicates the stock *decreased* in value by $7.59 per share).   After the user enters these values, inform the user how much the *total value* of their stock changed that day, as a number ***rounded to the nearest integer****,* and whether that value was gained or lost (remember that you learned rounding strategies yesterday!).  **Example:** If the user owns 53 shares of Google (GOOGL), and the price changed by 7.52 per share (positive, so an increase), the total value of their stock changed by by 53 \* 7.52, which is a gain of **$398.56**, or **$399** when rounded to the nearest integer:    **Example:** If the user owns 76 shares of Apple (AAPL), and the price *decreased* by 10.37 per share, the total value of their stock changed by by 76 \* -10.37, which is **$-788.12**, or **$-788** when rounded to the nearest *negative* integer:    **Example:** If the user owns 2005 shares of General Electric (GE), and the price *decreased* by 1.97 per share, the total value of their stock changed by by 2005 \* -1.97, which is **$-3949.85**, or **$-3950** when rounded to the nearest *negative* integer: |
| **Copy your program’s code from Replit and paste it below:**  (use the Courier New font for code-style!) |

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| **Programming Challenge 3: Exact Change!**    **Comment out or delete the code you wrote for the first problem.**  Write a program to accept a decimal amount of money from the user, such as 1.37, 5.00, or 2.94 to represent $1.37, $5.00, or $2.94.  Your program should determine what that value would be in *coins* -- quarters, dimes, nickels, and pennies -- and do so *using the fewest coins possible!*  For instance, if the user types in **1.37**, your program should read that as $1.37, and tell the user that the amount can be represented in a *minimum of 8 coins*: 5 quarters, 1 dime, 0 nickels, 2 pennies:    An entered amount of **5.00**, representing $5.00, can be represented with a minimum of 20 coins, all quarters:    And an entered amount of 2.94, representing $2.94, can be represented with a minimum of 17 coins: 11 quarters, 1 dime, 1 nickel, and 4 pennies:    Note that your program should print *all numbers as integers* -- no decimal points.  **The following is not acceptable!**  Numbers should **not** print with a "**.0**" |
| **Copy your program’s code from Replit and paste it below:**  (use the Courier New font for code-style!) |

**Make sure both partners have the same code for both problems!**

Done!

Submit this document in Google Classroom



***Sample solutions for all three problems will be posted tomorrow.***