**Task 1: Displaying Information**

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Explanation of Code:

Line 47: this code begins outside the methods where I declare my variables. numMonths is a variable I declared to store the first 4 months of the compounding period. The program will show the future value for each of the 4 months.

Line 50: in this line of code, I prompted the user for their initial value then stored it in the intitalBalance variable. Before the input portion of the code, I used the float function in case the user decides to enter decimal numbers and to convert any integer into floating point numbers.

Line 53: I prompted the user for the annual interest rate, then stored it to the variable annualInterestRate. I used the float function because we take in the annual interest rate as a decimal.

Line 56: I declared an array or an empty list to store the future values, which will be added later.

Line 11: going back up, I created a method to calculate the future value using the initial balance, annual interest rate and number of months as parameters to pass the information gathered from the user through to calculate the future value. **I used methods because I initially thought we had to use all covered material in the class, however this can be done without methods.**

Line 17: I declared the variable n to store the number of compounding periods.

Line 19: used a for loop to calculate the future value of investment for each month by looping through each month by adding one each time and using the formula to calculate the value. Multiply the rest of the formula by the month (the current month of the loop iteration).

Line 22: I declared a variable that calculates the future value then stores it.

Line 24: used the append method to add the future investment values for each month at the end of the list as the loop goes through each month. This adds the future values to the parameter variable called futureValues, which was originally declared outside the method as an empty array.

Line 26: this return statement will return the value of the investments in the future and will be called with the futureValues variable.

Line 32: used a method called valueTable to create a table that displays the number of months as integers on the left and the future investment value for each month on the right.

Line 36 & 35: these lines of code print the table headers and the lines for the table.

Line 39: used a for loop to adjust the future value for each month then print out the value for each current month and investmentValue iteration.

**Task 2: Paycheck for Employees**

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Explanation of Code:

Line 10, 14 & 17: in these lines I prompt the user for their name, hourly rate and number of hours worked and store it in the employeeName, hourlyRate and totalHoursWorked variables. Hourly rate and total hours worked are converted from integers to floating point numbers and I used the float function in case the user enters decimals.

Line 20 & 22: used the min and max functions to determine when regular hours are inputted and when overtime hours are inputted. Declared the regularHours variable and used the min function to determine regular hours worked with a minimum value between the hours worked and 160, stored the value to the regularHours variable. Declared a variable called overtimeHours and used the max function to determine the amount of overtime hours, subtracted the total hours worked inputted by the user by 160 to find the overtime hours.

Line 25-29: declared variables for regular pay, overtime pay, gross pay, tax deduction and net pay to calculate the value for each then stored it to their prospective variables.

Line 32 -38: prints all the information.

**Task 3: Rate Conversion**

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**Explanation of Code:**

Line 6: prompts the user for how many USD is in a CAD (according to google the conversion rate is 0.74)

Line 13: used a while loop to continue to loop or repeat the prompt almost infinitely until the condition has been met, then break the loop with an if statement when the Canadian amount entered is 0. While "True" means it will loop indefinitely until checked.

Line 14: asked the user for their amount in Canadian then store it to the canadianAmount variable that was declared. Used the float function because the value is a decimal.

Line 17: if the loop does not break it will go on indefinitely. This line of code breaks the loop if the condition is met.

Line 23: this line of code, I declared a variable to store the USD amount by multiplying the Canadian amount by the conversion rate then storing the value.

Line 26: prints the Canadian amount and the USD amount. This line of code is inside the while loop to repeat it each time a number is entered until the loop ends.

**Task 4: Simple Visual**

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Explanation of code:

Line 26: I first started my code with line 26 to declare storesSales as an empty dictionary and set storeNum equal to 1. I assigned 1 to storeNum because that's the number we are starting at then in the loop 1 will be added to it each time the while loop repeats.

Line 14: I then went back up and created the method printGraph to print the graph. I used storeNum and storeSales as parameters so they can be used in the method even if it's declared in the main.

Line 17: divides store sales by 100 so each asterisk can represent 100 sales.

Line 20: this line of code prints the number of asterisks by multiplying an actual asterisk by the numAstricks value.

Line 31: I used a while loop to infinitely repeat the prompt and increase the store number by 1 each time it loops until the condition has been met, then break the loop with an if statement when the storeSales equals -1. While "True" means it will loop indefinitely until checked.

Line 34: because this question is worth so many points, I used a try except block to test for exceptions so the exception block can handle the error. **This is something I learned previously.**

Line 40: I used an if statement to end the loop when the condition is met, in this case if the user enters -1.

Line 44: I then assigned store sales to the correct storeNum, by using the values in the storesSales dictionary.

Line 47: It is very important that I call the printGraph method inside the while true loop because each time a value is entered, we want the graph to print.

Line 48: This line increased the store number by 1 each time. For example, we start at 1, then the while true loop repeats the code, and the store number changes to 2 then 3 and so on.

Line 51: this is the second block of the try except function that catches the error, the prompt is repeated for the correct value to be entered.

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students and/or persons.

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