

CMPT 120 - Program 7
Program Due: Monday, November 4th, before 1:30 p.m. (Submitted & Printed)
Bring hardcopy to class to turn in

The purpose of this assignment is to use arrays and helper functions. You are to write a program that prints the following menu:

- H) Handle Grades
- M) More Positives or More Negatives?
- T) How Many Times?
- G) Grade a Quiz
- Q) Quit

Based on the user input, the following should take place.

If the user chooses **H**, your program should prompt for exactly 10 (integer) grades, one at a time. You should place the grades into an array, then *use 3 different helper methods* to calculate and **return** the high, low, and average grades. Yes, this method will call those methods. The helper methods will **not** print anything! (Do not use any of the built-in list methods like `.sort()`, etc.) You should then print these out, along with appropriate messages.

If the user chooses **M**, your program should prompt the user to enter a list of *up to* 10 integers into an array. The user will indicate she is finished by simply hitting **<Enter>**. Use a helper method to print a message indicating whether there are more positive numbers or negative numbers in the array, then print either the positive numbers (if there were more positive numbers) or the negative numbers (if there were more negative numbers). In case of a tie, print out the **entire** array.

If the user chooses **T**, your program should prompt for and read *up to* 10 negative integers into an array. The user will indicate she is finished by entering a positive number. (This positive number should NOT be stored in your array!) You should then ask the user for a target value. Pass the array and the target to a helper method, which should print out the array, the target and the number of times the target appears in the array, along with appropriate messages.

If the user chooses **G**, your program should prompt for and read exactly 8 strings, indicating a student's answers to a Multiple Choice quiz. Enter these values into an array. You should then prompt for and read exactly 8 strings again, this time representing the answer key for the quiz. Enter these into a separate array. Pass both arrays to a helper function, which will grade the quiz (by comparing each element of the quiz array with the corresponding element in the answer array) and return the number of correct answers. (This helper method will not print anything.) You should then print the student's grade on the quiz, both as a percentage and the corresponding letter grade (use a 10-point grading scale). [**CHALLENGE**: Validate the possible answers, accepting only A, B, C and D. Use my grading scale (see the syllabus) for the letter grade.]

After processing a choice, the menu should be repeated until **Q** is chosen. Your program should be written for a conceptually-challenged user (your program should not bomb, regardless of what value the user enters for a menu choice). Be sure to provide feedback for each value entered.

You **must** write methods for each of the above menu choices. You may **not** force `main()` to do all of the work! Your prompts should be very descriptive, including letting the user know which value she's entering (for example, **Please enter grade 7** or **Please enter answer 4**)