Activity 3 - GPA Program

**Calculate GPA Program**

Write a GPA-calculating program. It should have the following functionality:

· use a menu to present the user with options, as shown in the output below. Make a function for your menu that displays the menu text, gets the user's choice and converts it to uppercase (and returns it).

· **determine grade** for a score input by the user (not related to TEXT file data)

· **calculate GPA** based on scores stored in the list. It should read the scores from a file, convert the score to a grade, convert the grade to a weight, then calculate the average of those. The program should then print each subject (sorted alphabetically), score and the corresponding grade plus the final GPA at the end. (See example output)

· **add a subject and corresponding score** to their record (file)

· **quit** the program

Calculating a grade is based on the user's score and works like:

<50 = N, 50-64 = P, 65-74 = C, 75-84 = D, >= 85 = HD.  
 (Floats should be handled as well, e.g. 74.95 is a C.)

Use a function that only calculates the grade, but does not display it.  
 **NOTE:** Very important. You could write a function that takes no parameters and returns nothing, but asks the user for a score and prints the grade, BUT then you could ONLY use this function in the situation where you want to do those two things. **SO INSTEAD**... Pass the score in as an input parameter and return the grade (string) - displaying it should be done in the main function.

Weights for GPA are: N = 1.5, P = 4, C = 5, D = 6, HD = 7

Think about what functions you need to write and what functions you can reuse.

TEXT file at beginning:

CP1402,67

CP1401,86

Sample output:

Name: Sarah

Hi Sarah. Choose:

(D) etermine grade

(C) alculate GPA

(A) dd subject score

(Q) uit

>>> d

What is your total score? 67

C

Hi Sarah. Choose:

(D) etermine grade

(C) alculate GPA

(A) dd subject score

(Q) uit

>>> c

CP1401 86 HD

CP1402 67 C

Your GPA for 3 subject(s) is 6.0

Hi Sarah. Choose:

(D) etermine grade

(C) alculate GPA

(A) dd subject score

(Q) uit

>>> a

Subject code: CP1404

Total score: 90

CP1404 with score of 90 was added to your record.

Hi Sarah. Choose:

(D) etermine grade

(C) alculate GPA

(A) dd subject score

(Q) uit

>>> C

CP1401 86 HD

CP1402 67 C

CP1404 90 HD

Your GPA for 3 subject(s) is 6.33

Hi Sarah. Choose:

(D) etermine grade

(C) alculate GPA

(A) dd subject score

(Q) uit

>>> q

Thank you.

TEXT file at end:

CP1401,86

CP1402,67

CP1404,90