

For Loops Challenge 15:

Grade Point Average Calculator App

Description:

You are responsible for writing a program that will collect any number of grades from a user. Your program will sort these grades numerically from highest to lowest and calculate the grade point average of the user. Your program will then ask for the average the user desires and calculate what the user must get on their next assignment to achieve this average. Lastly, your program will make a copy of the users grades and allow them to alter one of their previous grades to see how doing worse or better on an assignment would have changed their overall average.

Step By Step Guide:

- Print a welcome message.
- Get user input for their name.
- Get user input for the number of grades they would like to enter.

- Create an empty list that will hold the user's grades.
- Get user input for each individual grade and add it to the list.

- Sort the grades from highest to lowest and print each grade individually as formatted below.

- Calculate the average grade for the student as a float.
- Round this average to two decimal places.
- Display the students grade summary as formatted below.
 - This summary should include the user's name, the total number of grades, the highest grade, the lowest grade, and the average.

- Prompt the user for their desired average.
- Calculate what grade they need to get on their next assignment to achieve this average.
- Round this grade to two decimal places.
- Wish the user luck and inform them of the needed grade to get their desired average.

- Make a copy of your original list of grades.
- Get user input for a grade value that they would like to change.
- Get user input for the new grade value they would like the old grade changed to.
- Make the appropriate changes in the copy of the original list.
 - Please keep the original grades list in tact.

- Sort the new grades from highest to lowest and print each grade individually as formatted below.

- Calculate the new average grade for the student as a float.

- Round this average to two decimal places.
- Display the students grade summary as formatted below.
 - This summary should include the user's name, the total number of grades, the highest grade, the lowest grade, and the average.
- Print a comparison of the users old average and updated average.
- Print a statement regarding how many points, rounded to two decimal places, their average changed by.
- Inform them that their original grades however are still the same and print the original grades as a list.
- Use at least 2 comments to describe sections of your code.
- “Chunk” your code so that is readable.
- Use appropriate and informative variable names.
- Format your output as below.

Example Output:

Welcome to the Average Calculator App

What is your name: mike

How many grades would you like to enter: 5

Enter grade: 72

Enter grade: 64

Enter grade: 80

Enter grade: 83

Enter grade: 77

Grades Highest to Lowest:

83

80

77

72

64

Mike's Grade Summary:

Total Number of Grades: 5

Highest Grade: 83

Lowest Grade: 64

Average: 75.2

What is your desired average: 79

Good luck Mike!

You will need to get a 98.0 on your next assignment to earn a 79.0 average.

Lets see what your average could have been if you did better/worse on an assignment.

What grade would you like to change: 64

What grade would you like to change 64 to: 80

New Grades Highest to Lowest:

83

80

80

77

72

Mike's New Grade Summary:

Total Number of Grades: 5

Highest Grade: 83

Lowest Grade: 72

Average: 78.4

Your new average would be a 78.4 compared to your real average of 75.2!

That is a change of 3.2 points!

Too bad your original grades are still the same!

[83, 80, 77, 72, 64]

You should go ask for extra credit!