CS 1160 – Introduction To Computer Programming

Lab 4 – Loop Practice

Learning Objectives
- Learn how to prompt the user for input data
- Learn how to use if-else statements
- Learn how to use loops
- Learn how to use the user's input data for useful calculations

Overview - Part 1

Write a program that requests grades from the user, computes the average grade, then tells the user their average and corresponding letter grade. You can assume the user will always enter grades between 0.00 to 100.00 and will enter an indefinite amount of grades. Use a loop that will accept the user's grade and prompt the user after each grade if they want to continue to enter grades. If the user enters a 'y' (for yes) continue looping, if the user enters a 'n' stop looping. You are required to use loops and must use a different loop for part 1 and part 2. If you use a while loop in part 2 you must use a for loop for part 1, and vice versa.

To display the user's grade, use the following grading scale:

- A: average grade >= 90.00
- B: 90.00 > average grade >= 80.00
- C: 80.00 > average grade >= 70.00
- D: 70.00 > average grade >= 60.00
- F: 60.00 > average grade

The Program - Part 1

This program will require accepting user input, totaling up those user inputs, averaging them, and using if, else if, or else statements to display the grade properly. An example execution of the program is below:

> Welcome to the grade estimator.
> Please enter your grade for the assignment: 90.00
> Would you like to enter another grade? (y/n): y
>
> Please enter your grade for the assignment: 72.55
> Would you like to enter another grade? (y/n): y
>
> Please enter your grade for the assignment: 95.82
> Would you like to enter another grade? (y/n): y
>
> Please enter your grade for the assignment: 40.10
> Would you like to enter another grade? (y/n): y
>
> Please enter your grade for the assignment: 89.99
> Would you like to enter another grade? (y/n): n
>
> Your average grade is 77.69.
> You will get a C in this class.

Overview - Part 2

Write a program that lets the user enter their starting weight and how much weight they want to lose per month, then creates and displays a table showing what their expected weight will be at the end of each month for the next 6 months. Provide an encouraging statement at the end with the total weight that will be lost. Ensure the output is formatted in such a way that is visually appealing and easy to understand. You can use the sample execution as your formatting standard if you like. You are required to use loops and must use a different loop for part 1 and part 2. If you used a while loop in part 1 you must use a for loop for part 2, and vice versa.

The Program - Part 2

This program will require accepting user input, using the user input to output a table, and properly formatting the output. You may use "\t" or "\n" to ensure your formatting looks neat. An example execution of the program is below:

```
Enter your starting weight (in lbs): 200.5
Enter how much weight you want to lose per month (in lbs): 2

Month:          |       Target Weight:
------------------------------------
1               |       198.5
2               |       196.5
3               |       194.5
4               |       192.5
5               |       190.5
6               |       188.5

You're going to lose 12.0 pounds over the next six months!
You got this!
```

How to Submit

Upload two separate programs, one .py Python program with your code for Part 1, and another for Part 2. Submit both to the drop box in Pilot.

Grading

This lab is worth 3.000 points, distributed as follows:

Task	Points
Part 1:	-
Successfully looped and prompted user for each grade and continuation	0.500
Successfully displayed average grade	0.500
Successfully displayed the proper letter grade for the class	0.500
Part 2:	-
Successfully prompted the user form starting weight and weight loss	0.500
Successfully looped and displayed table showing months and weight	0.500
Successfully displayed total weight loss at end and encouraging message	0.500
Total	3.000