CS 115 - Introduction to Programming in Python

Lab 02

Lab Objectives: Strings, Loops, Nested Loops.

Q1: Write a program, `Lab02_Q1.py`, that inputs the traffic light color ('R'-RED, 'Y'-YELLOW, 'G'-GREEN) for 8 cars which have arrived at the intersection and displays:

- Output "Ready to pass" for each car that sees the yellow light.
- Number of cars that have stopped.
- Percentage of cars that have passed.

SAMPLE RUN:

```
Enter the traffic light color R, G, Y for car 1: R
Enter the traffic light color R, G, Y for car 2: G
Enter the traffic light color R, G, Y for car 3: Y
Ready to Pass
Enter the traffic light color R, G, Y for car 4: W
Invalid traffic light color!
Enter the traffic light color R, G, Y for car 5: R
Enter the traffic light color R, G, Y for car 6: G
Enter the traffic light color R, G, Y for car 7: Y
Ready to Pass
Enter the traffic light color R, G, Y for car 8: R

Number of cars stopped: 3
Percentage of cars passed: 25.0%
```

Q2: Write a program, `Lab02_Q2.py` that inputs the initial bank balance of a customer followed by a sequence of positive and negative floating point numbers representing transactions. A positive input represents a credit entry in the account (deposit) and a negative number represents a debit entry (withdrawal). The input is terminated by the zero entry. The program should print the final balance and the average amount **deposited**.

SAMPLE RUN:

```
Enter the initial balance: 1500
Enter the transaction amount: 50
Enter the transaction amount: -75
Enter the transaction amount: 125
Enter the transaction amount: -800
Enter the transaction amount: 650
Enter the transaction amount: 0
Balance: 1450.0
Average deposit amount: 275.00
```

Q3: Write a program, `Lab02_Q3.py` which prompts the user to enter a phrase until the user enters the word 'exit' (not case-sensitive). For each phrase entered, the program outputs a modified version of the given phrase by removing 1 character from the beginning and the end of the word and displaying until the word can no longer be shortened. The outputs should appear as in the sample run.

Sample Run:

```
Enter a phrase (or 'exit'): HELLO
HELLO
 ELL
  L


Enter another phrase (or 'exit'): Consumption
Consumption
 onsumptio
  nsumpti
   sumpt
    ump
     m


Enter another phrase (or 'exit'): Bye!
Bye!
 ye


Enter another phrase (or 'exit'): Exit
End of program.
```