Exercises 5: Loop in Python

Exercise1: Write a Python program that uses a loop to read in a series of integers of unknown length; the program should continue to read in integer values (positive and negative), one at a time, until the user enter a zero. After the loop ends (meaning that the user has entered 0), the program should print out four values:

1- The number of positive (non-zero) integer that were entered.
2- The number of negative (non-zero) integer that were entered.
3- The sum of non-zero integer values that were entered.
4- The average of the (non-zero) values that were entered.

NB: Make sure that u can handle that input is not a character

Sample Execution:

Please enter an integer (0 to quit): -3
Please enter an integer (0 to quit): 15
Please enter an integer (0 to quit): 11
Please enter an integer (0 to quit): -9
Please enter an integer (0 to quit): 2
Please enter an integer (0 to quit): 0

Positive integers entered: 3
Negative integers entered: 2
Sum: 16
Average: 3.2

```
pos = neg = sum = 0
while True :
    nb = input("enter a nb ")
    try:
        nb = int(nb)
        if nb > 0: pos += 1
        elif nb < 0: neg += 1
        else: break
        sum += nb
    except ValueError:
         print("Input is not a number. It's a string")
print("Sum", sum)
print("Negative", neg)
print("Positive", pos)
print("Avg", sum/(neg+pos)) if neg+pos>0 else print("Error")
```

#second method

```
pos = neg = sum = 0

nb  =  input("enter a nb ")

try:
    nb = int(nb)

    while nb!=0:
        nb = input("enter a nb ")

        try:
            nb = int(nb)

            sum += nb

            if nb > 0:
              pos += 1
            else:
              neg += 1

        except ValueError:
             print("input is not a number")

except ValueError:
    print("input is not a number ")


print("Sum", sum)
print("Negative", neg)
print("Positive", pos)
if neg!=0 or pos!=0:
     print("Avg", sum/(neg+pos))
else:
     print("Error")
```

Exercise2: Write a Python program that asks the user to enter an integer number, and asks him with a simple question (Do you want to continue y/n?) if he wants to enter another number. The program stops asking the user to enter a new number when they type ”n” as an answer to the question. At the end, the program should display:

- The count of odd numbers.
- The sum of even numbers.
- The count of numbers ended by 5.

```
count_odd = sum_even = count_five = 0

while True:
    nb = input("enter a nb ")

    try:
        nb = int(nb)

        if nb % 2 == 0:
            sum_even += nb
        else:
            count_odd += 1
            if nb%10==5:
                count_five +=1

        go = input("Do you want to continue y/n")
        if go =="n":
           break
        elif go=="y":
           continue
        else:
            print("Enter y or n only")

    except ValueError:
        print("input is not a number. It's a string")

print("count odd is", count_odd)
print("Sum of even is", sum_even)
print("count of numbers ended by 5 is", count_five)
```

Exercise3: Write a Python program that asks the user to enter an integer number, and asks him with a simple question (Do you want to continue True/False?) if he wants to enter another number. The program stops asking the user to enter a new number when they type ”false” as an answer to the question. If he enters other than true or false the program should print error and stop after third attempt. At the end, the program should display:

- The count of odd numbers.
- The sum of even numbers.
- The count of numbers ended by 7.

```
count_odd = sum_even = count_seven = attempts = 0

max_attempts = 3


while True:

    nb = input("Enter a number: ")

    try:
        nb = int(nb)

        if nb % 2 == 0:
            sum_even += nb
        else:
            count_odd += 1
            if nb % 10 == 7:
                count_seven += 1

        while attempts < max_attempts:
            go = input("Do you want to continue? (True/False): ")

            if go == "False" or go == "True":
                break
            else:
                print("Enter True or False only")
                attempts += 1

        if attempts == max_attempts:
            print("Exceeded maximum attempts. Exiting loop.")
            break
```

```
        if go == False:
            break

    except ValueError:
        print("Invalid input. Please enter a number.")

print("Count of odd numbers:", count_odd)

print("Sum of even numbers:", sum_even)

print("Count of numbers ending with 7:", count_seven)
```