While loop SC #2

1Q) Counting the number of digits in a number.

  #Taking input from user in integrant write a counter condition in while loop for just counting the numbers given as input from user.

```python
n = int(input('enter a number : '))  # taking input from user
counter = 0     # counter starting from zero
while n > 0 :   # while input number is greater than zero
    n =n // 10  # divide it by 10 and make it into int using //
    counter += 1  # modify counter value

print('number of digits are ', counter)  # printing the output
```

Output :

```
,
enter a number : 12345667889
number of digits are  11
```

2Q) Finding sum of digits in a number

#If the number is given then find its sum by using while loop

```python
n = int(input('enter a number : '))  # taking input from user
sum = 0          # starting sum value from zero
while n > 0:     # while input number is greater than zero
    r = n % 10   # divide given number by 10
    n = n // 10  # divide it by 10 and make it into int using //
    sum = sum + r  # modify counter value

print('sum of digits are  ', sum)
```

Output :

```
enter a number : 6734
sum of digits are    20
```

3Q) Reversing a string

#Take input from user and make that given number into reverse order using while loop

```python
n = int(input('enter a number : ')) # taking input from user
rev = 0         # starting reverse value from zero
while n > 0:    # while input number is greater than zero
    r = n % 10  # divide given number by 10
    n = n // 10  # divide it by 10 and make it into integer using //
    rev = rev * 10 + r   # modify counter value

print('reverse number is  ', rev)
print(n)  # it will be zero because condition becomes false then loop exit and next statement is print
```

Output :

```
enter a number : 3427865
reverse number is    5687243
0
```

4Q) check if a number is a palindrome .

if the reverse of a number is equal to the original number then we say its a palindrome

```python
n = int(input('enter a number : '))  # taking input from user
m = n  # storing the value of n into m
rev = 0  # starting value is zero
while n > 0:    # while input number is greater than zero
    r = n % 10  # divide given number by 10
    n = n // 10  # divide it by 10 and make it into int using //
    rev = rev * 10 + r  # modify counter value

if m == rev:    # if value of m is equal to rev then print if block
    print('number is a palindrome')

else:  # else if value is not equal print else block

    print('number is not a palindrome')
```

Output :

```
enter a number : 1221
number is a palindrome
```