Assignment No 4 :(Loops)

Aim: a. Accept two numbers from the user (Minimum and Maximum). Find numbers which are divisible by 5 and multiple of 9 between the given range of minimum and maximum numbers.

b. Write a Python program to count the number of prime, even and odd numbers from a series of numbers.

Objective: To understand the use of for loop.

Theory: Loop is an iterative process which runs continuously till the condition is true. A for loop is used for iterating over a sequence (that is either a list, a tuple, a dictionary, a set, or a string).
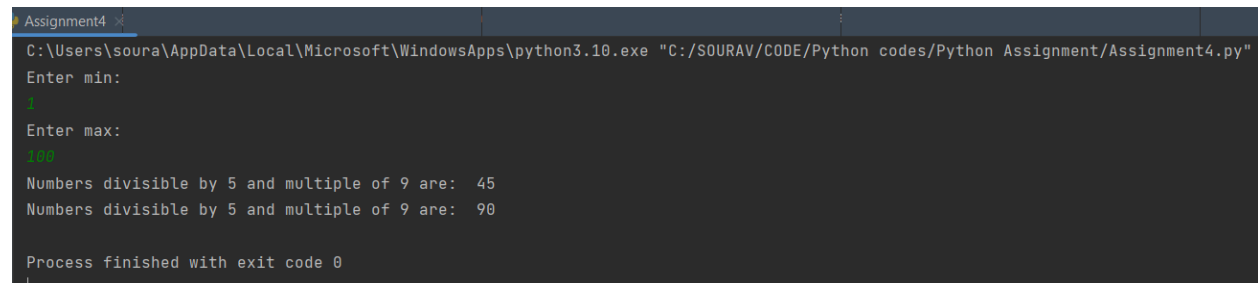
range () function - It returns the sequence of numbers which starts from 0 by default, it by 1 by default, and stops just before the specified number.

Loop continues until we reach the last item in the sequence. The body of for loop is separated from the rest of the code using indentation.

Code(a):

```python
lower = int(input("Enter min:\n"))
upper = int(input("Enter max:\n"))
for x in range(lower,upper+1):
    if x%5==0 and x%9==0:
        print("Numbers divisible by 5 and multiple of 9 are: ",x)
```

Output:

```
Assignment4
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\python3.10.exe "C:/SOURAV/CODE/Python codes/Python Assignment/Assignment4.py"
Enter min:
1
Enter max:
100
Numbers divisible by 5 and multiple of 9 are:  45
Numbers divisible by 5 and multiple of 9 are:  90

Process finished with exit code 0
```

Code(b):

```python
c = 0
count = 0
k=0
print("1-Prime, 2-Even, 3-Odd")
choice = int(input("Enter your choice: "))
m = int(input("Enter starting range: "))
n = int(input("Enter ending range: "))
a = False
for i in range(m, n + 1):
```

```
    if choice == 1:
        if i == 1:
            c=c
        elif i == 2:
            c += 1
        else:
            for j in range(2,i):
                if i%j == 0:
                    a = False
                    break
                else:
                    a = True
            if a == True:
                c += 1 #counting prime
    elif choice == 2:
        if i % 2 == 0:
            count +=1

    elif choice == 3:
        if i % 2 != 0:
            k +=1
if choice == 1:
    print("Prime numbers: ",c)
if choice == 2:
    print("Even numbers: ",count)
if choice == 3:
    print("Odd numbers: ",k)
```

Output:

```
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\python3.10.exe "C:/SOURAV/CODE
1-Prime, 2-Even, 3-Odd
Enter your choice: 1
Enter starting range: 1
Enter ending range: 10
Prime numbers:  4


Process finished with exit code 0
```

```
Assignment4 ×
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\python3.10.exe "C:/SOURAV/C
1-Prime, 2-Even, 3-Odd
Enter your choice: 2
Enter starting range: 1
Enter ending range: 10
Even numbers:  5


Process finished with exit code 0
```

```
Assignment4 ×
C:\Users\soura\AppData\Local\Microsoft\WindowsApps\python3.10.exe "C:/SOURAV/COD
1-Prime, 2-Even, 3-Odd
Enter your choice: 3
Enter starting range: 1
Enter ending range: 10
Odd numbers:  5


Process finished with exit code 0
```

Conclusion:

Hence, we have learned the implementation of for loop.