while ...else

This syntax is used to repeat while loop at least one time

Syntax:

while <condition>/<boolean-expr>:
    statement-1
    statement-2
else:
    statement-3
    statement-4

while block is repeated until given condition is True
if condition is False, PVM execute else block

```
n=1
while n<=5:
   print(n)
   n=n+1
else:
   print("else block")

print("continue...")
```

Output:
1
2
3
4

5
else block
continue...

Example:
```
# Finding factorial of input number
# num=0 --> 1
# num=3 --> 6 -- 1x2x3 --> 6
# num=4 --> 24 --> 1x2x3x4=24


num=int(input("enter any number "))
num1=num
fact=1
while num>0:
    fact=fact*num
    num=num-1
else:
    print(f'Factorial of {num1} is  {fact}')
```

Output:
```
enter any number 4
Factorial of 4 is  24

enter any number 0
Factorial of 0 is  1
```

Example:
```
# Count of values
ans="no"
c=0
```

```python
while ans!=(input("enter your answer ")):
    num=int(input("enter any number "))
    c=c+1
else:
    print(f'Count is {c}')
```

Output

enter your answer yes
enter any number 10
enter your answer yes
enter any number 20
enter your answer yes
enter any number 30
enter your answer no
Count is 3

enter your answer no
Count is 0

for loop

for loop is used to iterate or read values from iterables or collections.
for loop in python even used for repeating block of statements
number of times.

Syntax:	Syntax

for variable in iterable:
    statement-1
    statement-2
	for variable in iterable:
	    statement-1
	    statement-2
	else:
	    statement-3

for loop each time it read value/object from collection and assign to variable. After assigning, it execute statement-1,statement-2	

Example:

```
for x in 10,20,30,40,50:
    print(x)

for y in "ABCDE":
    print(y)

for z in ["python","java","oracle"]:
    print(z)

#for a in 1+2j:
#   print(a)
```

Output:
```
10
20
30
40
50
A
B
C
D
E
python
java
```

oracle

Example:

```
# Write a program to count alphabets,digits and special characters
exists within string
ac=0
dc=0
sc=0
str1=input("Enter any string ")
for ch in str1:
    if ch>='A' and ch<='Z' or ch>='a' and ch<='z':
        ac=ac+1
    elif ch>='0' and ch<='9':
        dc=dc+1
    else:
        sc=sc+1


print(f'Alphabet Count {ac}')
print(f'Digits Count {dc}')
print(f'Special Character Count {sc}')
```

Output:
Enter any string abc $%^
Alphabet Count 3
Digits Count 0
Special Character Count 4

Example:

```
# Write a program to convert input string from upper case to lower
case

str1=input("Enter any string ")  # Ab
```

```
str2=''
for ch in str1:
    if ch>='A' and ch<='Z':
        str2=str2+chr(ord(ch)+32)
    else:
        str2=str2+ch

print(str1)
print(str2)
```

Output:
Enter any string aBc123$%
aBc123$%
abc123$%

range
range is a data type in python
range is sequence data type.

Write a program to count vowels in input string
Write a program to convert input string from lowercase to uppercase
Write a program to capitalize string (first letter capital remaining lowercase)
Write a program to convert string into title case (every word first letter is capital and remaining is lowercase)
Write a program to swapcase (uppercase to lowercase and lowercase to uppercase)