Loops in Python

Loops are used to repeat instructions.

while Loops

```
while condition :
    #some work
```


print hello 5 times
print numbers from 1 to 5

show infinite, iterator

Let‘s Practice

Print numbers from 1 to 100.

Print numbers from 100 to 1.

Print the multiplication table of a number n.

Print the elements of the following list using a loop:

[1, 4, 9, 16, 25, 36, 49, 64, 81,100]

Search for a number x in this tuple using loop:

[1, 4, 9, 16, 25, 36, 49, 64, 81,100]

Break & Continue

Break : used to terminate the loop when encountered.

Continue : terminates execution in the current iteration & continues execution of the loop with the next iteration.

take search example
& stop the search when found

print all numbers but not multiple of 3

Loops in Python

Loops are used used for sequential traversal. For traversing list, string, tuples etc.

for Loops

for *el* in *list*:
    #some work

```
list = [1, 2, 3]

for el in list:
    print(el)
```

for Loop with else

for *el* in *list*:
    #some work
else:
    #work when loop ends

```
for el in list:
    print(el)
else:
    print("END")
```

else used as it doesn't execute when break is used

Let‘s Practice

using for

Print the elements of the following list using a loop:

[1, 4, 9, 16, 25, 36, 49, 64, 81,100]

Search for a number x in this tuple using loop:

[1, 4, 9, 16, 25, 36, 49, 64, 81,100]

range( )

Range functions returns a sequence of numbers, starting from 0 by default, and increments by 1 (by default), and stops before a specified number.

range(start?, stop, step?)


```
for el in range(5):
    print(el)

for el in range(1, 5):
    print(el)

for el in range(1, 5, 2):
    print(el)
```

Let‘s Practice

using for & range( )

Print numbers from 1 to 100.

Print numbers from 100 to 1.

Print the multiplication table of a number n.

pass Statement

pass is a null statement that does nothing. It is used as a placeholder for future code.

```
for el in range(10):
    pass
```


generally used in execption handling

Let‘s Practice

WAP to find the sum of first n numbers. (using while)

WAP to find the factorial of first n numbers. (using for)