# 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)