

# *Python Programming*

## Membership Operators

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# Definitions for sequences

- Let's say we have string aaabcdefgg
- **Prefix:** Any string starts from the first character (n prefixes)
  - a, aa, aaa, aaab, aaabc, ..... aaabcdefgg
- **Suffix:** Any string ends at the last character (n suffixes)
  - g, gg, fgg, efgg, .... Aaabcdefgg
- **Substring:** Starts wherever and ends wherever, but **consecutive**
  - E.g. of length 3: aaa, aab, abc, cde, def, efg, fgg. Same as *subarray*.
- **Sub-sequence:** Not **consecutive** but must be in order
  - In order: Next letter must have bigger index
  - adef, bgg, aeg, cdgg
    - aeg indices: 0 5 8
  - But not: gga, ed, aca

# in operator

```
4 # We call string a sequence
5 # str1 in str2: true IF str1 is substring of str2
6 name = 'mostafa'
7 # All prints are True
8 print('mostafa' in name)
9 print('mostaf' in name)
10 print('mosta' in name)
11 print('most' in name)
12 print('mos' in name)
13 print('mo' in name)
14 print('m' in name)
15 print(' ' in name)
16
17 print('ostafa' in name)
18 print('tafa' in name)
19 print('fa' in name)
20
21 print('sta' in name)
22 print('ostaf' in name)
```

# in operator

```
2
3 name = 'mostafa'
4 # All prints are False
5 print('Mostafa' in name)
6 print('mofa' in name) ... # sub-sequence, not substring
7 print('aft' in name)
8
```

# not in Operator

```
3
4  # Not in: Opposite of 'in' meaning
5  name = 'mostafa'
6  # All prints are False
7  print('mostafa' not in name)
8  print('most' not in name)
9  print('m' not in name)
10 print('' not in name)
11 print('ostafa' not in name)
12 print('sta' not in name)
13
14 # All prints are True
15 print('Mostafa' not in name)
16 print('mofa' not in name)
17 print('aft' not in name)
18
```

*“Acquire knowledge and impart it to the people.”*

*“Seek knowledge from the Cradle to the Grave.”*