What are we gonna Master today?

Concatenation in String

In Python, when we add (+) two or more strings, they get joined in order

eg. $s1 = 'Hello'$ $s2 = 'Python'$

$s1 + s2 = 'HelloPython'$

↑ no space

$s1 + " " + s2 = 'Hello\ Python'$

As multiplication is repeated addition, it adds the string repeatedly.

eg ⇒ $s1 = "hi"$

$s1 * 3 = 'hihihi'$

Note :- Subtraction and division not supported.

Slicing in Python

Slicing means pulling out a sequence of character from a string.

Above allows us to extract part of sequence from a sequence.

eg : with slicing, we can extract

"may" from "mayank"

* Concept of slicing is very important, it is used in other sequences like list, tuple as well as in numpy arrays & pandas dataframe.

To slice a string, we use [ ]

Syntax :- $s[a:b]$

a → start, b → end

In above a = start index

b = end index

(python stops slicing at b-1)

example

s1 = 'mayanK'

0 1 2 3 4 5

s1[0:3] = 'may'

s = 'python'

s[1:4] = 'yth'

P y t h o n

0 1 2 3 4 5

s[3:10] = s[3:len(s)]

s[0:] =

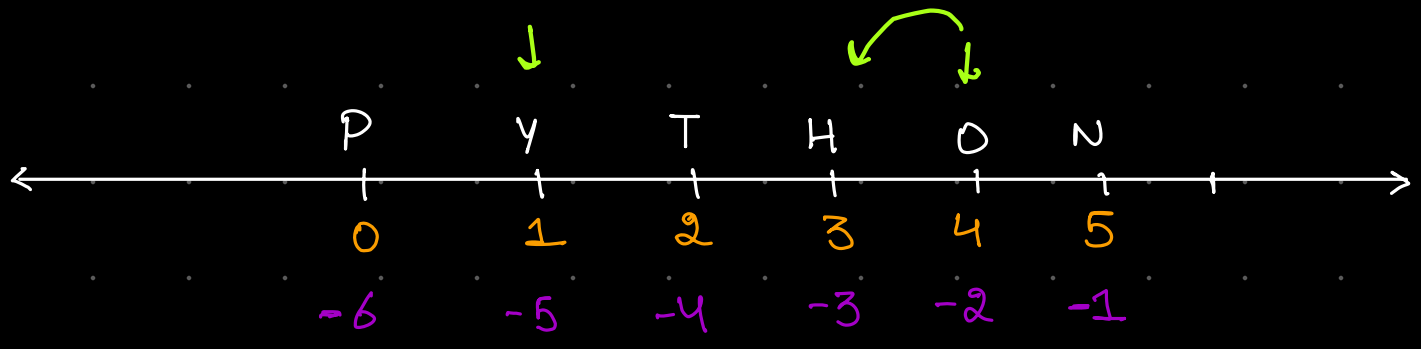
s[:] =

s[2:2] =

We saw 1 things above

1] Slicing try to give you answer till it finds the string.

Number line approach to solve slicing Question.



s[1:4]

Slicing works well for -ve indexes as well.

s[-4:-1] =

s[-3:-1] =

s[-2:-6] =

Using Step / Stride Value

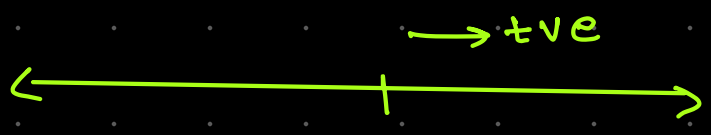
&[start:stop:step]

Slicing can accept a 3rd parameter as well after start and stop.

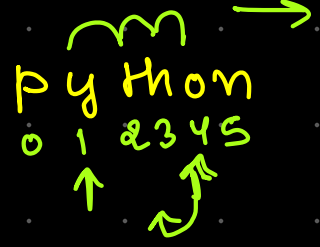
Third parameter is called step / stride.

So, complete syntax is

&[start : end : step]



Step value indicates how many character to move forward after first character is retrieved.



Default value +1

direction is important

If dirn is +ve, end is (end - 1)

If dirn is -ve, end is (end + 1)

Let's see few example :-

```
s='python'

s[0:5]
s[0:5:1]
s[0:5:2]

s[5:0]
s[5:0:-1]
s[5:0:-2]
```

2 things which are clear from examples:

1] Magnitude determines how many steps we have to take while we move from start to end.

2] If we can never reach end from start, we just return an empty string.

* If positive and negative index are mixed, then just convert to one sign and follow above rules.

eg:

```
s = 'Python'
    0 1 2 3 4 5
   -6-5-4-3-2-1
```

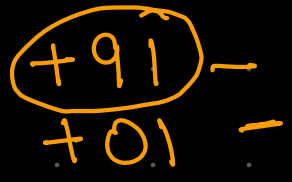
s[-6 : 3]

s[-6 : 3 : 2]

Industry example of slicing.

1. Extracting words from sentence

2. Country code from mobile number



3. password / cryptography

* Indexing & slicing works in a same way for lot of other data type as well.