

STRINGS

Accessing (characters in a String)

initialize a string `str1` -
`str1 = "Hello World!"`

gives the first character ~~str~~ `str1`

>>> `str1[0]`

'H'

>>> `str1[6]`

'W'

>>> `str1[11]`

'!'

>>> `str1[2+4]`

'W'

gives error as index must be an integer

>>> `str1[1.5]`

Python allows an index value to be -ve also.

>>> `str1[-1]`

'!'

`str1[-12]`

'H'

Positive Indices	0	1	2	3	4	5	6	7	8	9	10	11
String	H	e	l	l	o		W	o	r	l	d	!
Negative indices	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	-2	-1

An inbuilt function `len()` in Python returns the length of the string that is passed as parameter.

Ex: `str1 = "Hello World"`

>>> `len(str1)`

12

```
>>> n = len(str1)
>>> print(n)
```

12

String is Immutable : It means that content of the string cannot be changed after it has been created.

String Operations

① Concatenation :- To concatenate means to join. Python allows us to join two strings using concatenation operator plus (+)

```
>>> str1 = 'Hello'
>>> str2 = 'World!'
>>> str1 + str2
'HelloWorld!'
```

② Repetition # assign string 'Hello' to str1

```
>>> str1 = 'Hello'
>>> str1 * 2
Output: 'HelloHello'
```

③ Membership Python has two member operators 'in' and 'not in'

```
>>> str1 = "Hello World!"
>>> 'W' in str1
True
>>> 'My' in str1
False
>>> 'Wor' in str1
True
```

```
>>> str1 = 'Hello World!'
>>> 'My' not in str1
True
```

```
>>> 'Hello' not in str1
False
```

Slicing In Python, to access some part of a string or substring, we use a method called slicing. This can be done by specifying an index range. Given a string `str1`, the slice operation `str1[n:m]` returns the part of the string `str1` starting from index `n` (inclusive) and ending at `m` (exclusive).

In other words we can say that `str1[n:m]` returns all the characters starting from `str1[n]` till `str1[m-1]`.

```
>>> str1 = 'Hello World!'
```

```
>>> str1[1:5]
'ello'
```

```
>>> str1[7:10]
```

```
>>> str1[3:20] # index that is too big is truncated down to
'lo World!'    # the end of the string
```

If the first index is not mentioned, the slice starts from index.

```
>>> str1[:5]
'Hello'
```