

Chapter 3 - Strings

String is a data type in Python.

String is a sequence of characters enclosed in quotes.

We can primarily, write a string in these three ways

1. Single quoted strings $\rightarrow a = 'Harry'$
2. Double quoted strings $\rightarrow b = "Harry"$
3. Triple quoted strings $\rightarrow c = '''Harry'''$

String Slicing

A string in Python can be sliced for getting a part of the string.

Consider the following string:

$name = "Harry"$
0 1 2 3 4
(-5) (-4) (-3) (-2) (-1)
 $\Rightarrow \text{length} = 5$

The index in a string starts from 0 to (length-1) in Python. In order to slice a string, we use the following syntax:

$sl = name[ind_start : ind_end]$

first index included

last index is not included

$sl[0:3]$ returns "Har" \rightarrow characters from 0 to 3

$sl[1:3]$ returns "ar" \rightarrow characters from 1 to 3

Negative Indices: Negative Indices can also be used as shown in the figure above. -1 corresponds to the (length-1) index, -2 to (length-2)

Slicing with skip value

We can provide a skip value as a part of our slice like this:

```
word = "amazing"  
word[1:6:2] → 'mzn'
```

Other advanced slicing techniques

```
word = "amazing"  
word[:7] → word[0:7] → 'amazing'  
word[0:] → word[0:7] → 'amazing'
```

String functions

Some of the mostly used functions to perform operations on or manipulate strings are:

- 1> `len()` function → This function returns the length of the string

```
len("Harry") → returns 5
```

- 2> `string.endswith("xy")` → This function tells whether the variable string ends with the string "xy" or not. If string is "Harry", it returns true for "xy" since Harry ends with xy

- 3> `string.count("c")` → Counts the total number of occurrence of any character

- 4> `string.capitalize()` → This function capitalizes the first character of a given string.

5. `string.find(word)` - This function finds a word and returns the index of first occurrence of that word in the string.

6. `string.replace(oldword, newword)` - This function replaces the oldword with newword in the entire string.

Escape Sequence Characters

Sequence of characters after backslash '\'. → Escape Seq. characters

Escape sequence character comprises of more than one characters but represents one character when used within the strings.

Examples `\n`, `\t`, `\'`, `\\` etc.

↙ ↘ ↙ ↘ ↙ ↘
newline Tab Single quote backslash