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 → a = 'Harry'
2. Double quoted strings → b = "Harry"
3. Triple quoted strings → c = ''' Harry '''

String Slicing

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

name = "| H | a | r | r | y |" ⟹ length = 5
$$\begin{array}{ccccc} 0 & 1 & 2 & 3 & 4 \\ (-5) & (-4) & (-3) & (-2) & (-1) \end{array}$$

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" → characters from 0 to 3
sl [1:3] returns "ar" → 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("rry") → This function tells whether the variable string ends with the string "rry" or not. if string is "Harry", it returns true for "rry" since Harry ends with rry

3> String.count("c") → Counts the total number of occurence 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 occurence 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.