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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

	H	a	r	r	y
	0	1	2	3	4
	(-5)	(-4)	(-3)	(-2)	(-1)

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)

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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 ("xxy") → This function tells whether the variable string ends with the string "xxy" or not. if string is "Harry", it returns true for "xxy" since Harry ends with xxy

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.

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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.
(\n → newline, \t → Tab, \' → Single quote, \\ → backslash.)

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Chapter 3 - Practice Set

1. Write a Python program to display a user entered name followed by Good Afternoon using input() function

2. Write a program to fill in a letter template given below with name and date.

```
letter = ''' Dear <|NAME|>,
                You are selected!
<|DATE|> '''
```

3. Write a program to detect double spaces in a string

4. Replace the double spaces from Problem 3 with single spaces.

5. Write a program to format the following letter using escape sequence characters.

letter = "Dear Harry, This Python course is nice. Thanks!"