

DATA SCIENCE COURSE TUTORIAL # 15

3.8 Python String Operations and Methods

Strings are one of the most commonly used data types in Python. A string is a sequence of characters (letters, numbers, symbols). Strings are always written inside quotes. You can use single quotes `' '`, double quotes `" "`, or triple quotes `''' '''` / `""" """` for multi-line strings.

Example:

```
text = "Python"
```

String Functions

Python provides many built-in functions and methods to work with strings.

```
text = "Python"

print(len(text))          # Length of string → 6
print(text.upper())       # Converts to uppercase → 'PYTHON'
print(text.lower())       # Converts to lowercase → 'python'
print(text.title())       # Each word starts with a capital letter → 'Python'
print(text.capitalize())  # First character capitalized → 'Python'
print(text[0])            # Accessing 1st character → 'P'
print(text[-1])           # Accessing last character → 'n'
```

String Slicing

Slicing is used to extract parts of a string using index ranges.

```
print(text[0:4])          # 'Pyth' (from index 0 to 3)
print(text[2:])           # 'thon' (from index 2 to end)
print(text[:3])           # 'Pyt' (from start to index 2)
print(text[::-1])         # 'nohtyP' (reversed string)
```

String Concatenation

Concatenation means joining two or more strings together using the `+` operator.

```
first = "Ali"  
last = "Ahmed"  
full = first + " " + last    # Adding space between words  
print(full)    # Ali Ahmed
```

String Repetition

You can repeat a string multiple times using the `*` operator.

```
word = "Hi! "  
print(word * 3)    # Hi! Hi! Hi!
```