Agenda

1. Strings in Python
2. Numeric representation of strings & ASCII
3. String formatting & manipulation
4. String methods
5. Palindrome
6. Mutability and Immutability

"The best way to learn a language is to speak to natives."

The guy learning python:

help   "___"   '___'

Iphe   """___""" doc string

String → ~~Group~~ of characters

Sequence of characters (order matters)

"___' → error

What type of characters can we have?

- Small alphabets - [a - z]   ✓
- Capital Alphabets - [A - Z]   ✓
- Numbers - [0 - 9]   ✓
- White spaces   ✓
- Special characters   ✓

Binary Representation

- Computer does not understand characters.
- For every character let's have a pre defined number attached to it.

Why is it important to have common representations of characters across all platforms?

- When different characters are mapped to different numbers on different platforms, if try to send a message from let's say Android to iOS, our message can be misinterpreted.
- That is why we need consistent mapping of characters.

Decimal → 0 — 9   (Humans)

Binary → 0 — 1   (Computer)

low voltage / off   high voltage / on

$$2 + 3$$
$$\downarrow \qquad \downarrow$$
$$10 \qquad 11$$

ASCII

- American Standard Code for Information Interchange. ⟵
- ASCII used to have 256 characters. ✔
- With the help of this, the issue of consistency goes away.

ord ("A") → 65

chr (97) → 'a'

ios

a → 1
b → 2
⋮
z → 26

android

a → 20
b → 21
⋮

help ⟶ all good

A — Z ⇒ 65 — 90

a — z ⇒ 97 — 122

String Manipulation

+ operator

* operator

<u>Lexicographical order</u> → Order of words in a dictionary.

String formatting -

```python
l = 5
b = 10
a = l * b
```

Code 1:

```python
print("Length =", l, "Breadth =", b, "and Area =", a)
```

Code 2: Using {} as placeholder and .format() function

```python
print("Length = {}, Breath = {}, and Area = {}".format(l, b, a))
```

Code 3: Using F-Strings

```python
print(f"Length = {l}, Breath = {b}, and Area = {a}")
```

> **Output**

```
Length = 5, Breath = 10, and Area = 50
```

String Methods

1) .split()

2) .join()

3) str()

4) .find()

5) .replace()

6) .count()

7) .isdigit()

8) .isalpha()

9) .isalnum()

10> . isupper ()   & . islower ()

Palindrome

"racecar" → true

"utkarsh" → false

Mutability and Immutability

→ List , Set , Dictionary

Mutable : whose value can be changed.

Immutable : whose value can't be changed.

a = 5

a = 23

| 23 |

| 5 |

l = [2 , 5 , 8]

l [1] = 10

| 2 |
| 5 | 10
| 8 |