**Module 15: Regular expression**

The re module in Python is used for regex operations.

import re

* Split

Used to split a string based on a regex pattern.

import re

text = "apple, banana; orange|grapes # papaya $ grapes & pinapple "

result = re.split(r'[,;|#$&]', text)

print(result)

* Working with Special Characters, Dates, Emails
* \d → digits
* \w → word characters (letters, numbers, underscore)
* \s → whitespace

Example: Match Date (DD/MM/YYYY)

pattern = r"\d{2}/\d{2}/\d{4}"

text = "Today's date is 19/09/2025"

match = re.search(pattern, text)

print(match.group())

Example: Match Email

pattern = r"[a-zA-Z0-9.\_%+-]+@[a-zA-Z0-9.-]+\.[a-z]{2,}"

text = "Contact us at support@example.com"

match = re.search(pattern, text)

print(match.group())

* Quantifiers
* \* → 0 or more times
* + → 1 or more times
* ? → 0 or 1 time
* {n} → exactly n times
* {n,m} → between n and m times

Import re

text = "Helloooooo"

print(re.findall(r"o+", text)) # ['ooooooo']

print(re.findall(r"lo{2}", "hello loo llo")) # ['llo']

* Match and Find All
* match() → checks only at the beginning
* findall() → finds all matches

import re

text = "cat mat bat rat"

print(re.match(r"cat", text)) # Match at start

print(re.findall(r"[cm]at", text))

* Character Sequence and Substitute

sub() is used to replace text.

Import re

text = "My phone: 123-456-7890"

result = re.sub(r"\d", "X", text)

print(result)

* Search Method with Example

search() finds the first occurrence anywhere in the string.

Import re

text = "Order number: 4567 placed on 18/09/2025"

match = re.search(r"\d+", text)

if match:

print("First number found:", match.group())

✅ **Summary**

* **split()** → Break string by regex
* **Special characters** → \d, \w, \s etc.
* **Quantifiers** → \*, +, {n,m}
* **match()** → from start
* **findall()** → all matches
* **sub()** → substitute text
* **search()** → find first occurrence