DICTIONARY

Python Dictionary – Documentation

Definition:

* A dictionary is a book or online tool that lists words in alphabetical order.
* It gives the **meaning, pronunciation, and spelling** of each word.
* It helps people **understand and use words correctly**.
* Dictionaries may include **synonyms, antonyms, and example sentences**.
* Some dictionaries explain the **origin (etymology)** of words.
* There are **different types** of dictionaries — general, bilingual, and subject-specific (like medical or technical).
* **Online dictionaries** are fast and easy to use on phones and computers.
* They are useful for **students, teachers, writers, and professionals**.
* A dictionary helps to **improve vocabulary and language skills**.
* It is an **important tool for learning and communication**.

syntax:

my\_dict = {

"key1": "value1",

"key2": "value2",

"key3": "value3"

}

Characteristics:

From Python 3.7 onwards, dictionaries maintain the insertion order of items.

(In Python 3.6 and earlier, they were unordered.)

Changeable (Mutable):

You can add, update, or remove items after the dictionary is created.

No Duplicates:

Dictionary keys must be unique. If a key is repeated, the latest value will overwrite the previous one.

## Key–Value Pairs:

Data is stored in pairs – each key acts as an identifier and is linked to a value.

## Dynamic:

You can change the size and content of a dictionary at runtime.

## Fast Lookup:

Dictionaries are implemented using hash tables, making data retrieval very efficient.

## Creating a Dictionary

# Using curly brackets

student = {"name": "Kannika", "age": 20, "course": "AI & DS"}

# Using dict() constructor

info = dict(name="Ravi", age=21, city="Coimbatore")

## Accessing Items

print(student["name"]) # Output: Kannika

print(student.get("course")) # Output: AI & DS

## Adding and Updating Items:

student["college"] = "PERI" # Add new key-value pair

student["age"] = 21 # Update existing value

## Removing Items:

student.pop("course") # Removes a specific key

del student["age"] # Deletes key-value pair

student.clear() # Removes all items

## Looping Through a Dictionary:

for key, value in student.items():

print(key, ":", value)

## Nested Dictionaries:

A dictionary can contain another dictionary inside it.

students = {

"student1": {"name": "Asha", "age": 20},

"student2": {"name": "Ravi", "age": 21}

}

## Applications of Dictionaries:

* Helps to know the **meaning** of words.
* Shows the **correct spelling** of words.
* Tells how to **pronounce** words.
* Helps to **learn new words** and improve vocabulary.
* Gives **example sentences** for better understanding.
* Shows **synonyms and antonyms** of words.
* Helps in **translation** between languages.
* Useful for **students and teachers** in studies.
* Helps to **write and speak correctly**.
* Aids in **learning the language** easily.

## Example Program:

# Example: Display student info

student = {"name": "Meena", "age": 19, "course": "AI"}

for key, value in student.items():

print(f"{key}: {value}")

## Output:

name: Meena

age: 19

course: AI