DICTIONARY

**Definition**

* Key-word,value-meaning
* Dictionary are used to store data values in key value pairs.
* A dictionary is collection of order, changable and do not allow duplicates.
* As of python version 3.7 dictionaries are ordered but in python 3.6 and earlier dictionary are unordered.

**Syntax**

my\_dict = {

"key1": "value1",

"key2": "value2",

"key3": "value3"

}

**Characteristics**

* Ordered
* Changeable (Mutable).
* No Duplicate
* Key–Value Pairs
* Dynamic
* Fast Lookup

**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**

* Storing **structured data** (e.g., student records, employee details).
* **Fast searching** using keys.
* Representing **JSON data** structures.
* Useful in **machine learning** for feature mapping and configuration settings.

**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