

15/07/2021

Dictionary:

- An unordered collection of key-value pair.
- Allows fast lookups, insertions, deletions, because it is implemented using hash tables.
- mutable, can update, add, remove elements dynamically.

Syntax:

```
my_dict = {"name": "Alice", "age": 25, "city": "New York"}
```

1. Accessing dictionary items:

- we can access values using keys.
- using square brackets `[]`:

```
Student = {"name": "John", "age": 20}
```

```
print(Student["name"])
```

output: John.

if key does not exist, Key Error arise.

using `.get()` method:

```
print(Student.get("age"))
```

output: 20.

```
print(Student.get("grade", "not available"))
```

output: Not available.

if the key does not exist, `.get()` set was None/default value.

2. Adding and updating !
we can add new key-value Pairs /
update existing values using assignment (:)

using .update

3. Removing Dictionary items:
delete using del, pop(), popitem()

using del :

del Student ['age']

using pop() :

Removes & returns the value.

using popitem()

Removes last inserted item

using clear :

Removes all items.

4. Iterating through a dictionary :

1. looping through keys :

Student = {"name": "John", "age": 22,
"course": "CS"}

for key in Student :

Print (key) #

Output: John name
CS

2. looping

3. looping

for key

print

output

Nested

Dictionary

- a d

Students : =

"S

Print (Student

Output : Ali's

Adding a

Students C

print (Student

Output : 1 Student

"Student

"Student

Iterating :

for stud

Print (

2. looping through key & values (.items())
3. looping through key & values (.items())
for key, value in student.items():
print (f"{key}: {value}")

output: name: John
age: 20
Course: CS.

Nested Dictionaries:

- a dictionary inside another dictionary.

```
students = {  
    "Student 1": {"name": "Alice", "age": 22},  
    "Student 2": {"name": "Bob", "age": 21},  
}
```

```
print(students["Student 1"]["name"])
```

output: Alice.

Adding a new entry:

```
students["Student 3"] = {"name": "Charlie",  
    "age": 23}
```

```
print(students)
```

output: {
 "Student 1": {"name": "Alice", "age": 22},
 "Student 2": {"name": "Bob", "age": 21},
 "Student 3": {"name": "Charlie", "age": 23}
}

Iterating: for student, details in students.items():
 print(f"{student}:")
 for key, value in details.items():
 print(f"{key}: {value}")

Output :

Student 1:

name : Ali

age : 22

Student 2:

name : Bob

age : 21

Student 3:

name : Charlie

age : 23