

Understanding Dictionaries in Python

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AGENDA

- What is dictionary?
- Dictionary Methods

What is a Dictionary?

- A collection of key-value pairs.
- Keys must be unique and immutable (e.g., strings, numbers, tuples).
- Values can be any data type.
- Unordered and mutable (can be changed).

Creating a Dictionary

- Syntax:

```
my_dict = {key1: value1, key2: value2}
```

- Example

```
student = {"name": "Alice", "age": 21, "grade": "A"}
```

Accessing Values

- Syntax:

```
value = my_dict[key]
```

- Example

```
student = {"name": "Alice", "age": 21, "grade": "A"}
```

```
print(student["name"]) # Output: Alice
```

Modifying a Dictionary

- Add or Update:

```
my_dict[key] = new_value
```

- Delete:

```
del my_dict[key]
```

- Example:

```
student["grade"] = "A+"  
del student["age"]
```

Common Dictionary Methods

Method	Description
clear()	Removes all the elements from the dictionary
copy()	Returns a copy of the dictionary
fromkeys()	Returns a dictionary with the specified keys and value
get()	Returns the value of the specified key
items()	Returns a list containing a tuple for each key value pair
keys()	Returns a list containing the dictionary's keys
pop()	Removes the element with the specified key
popitem()	Removes the last inserted key-value pair
setdefault()	Returns the value of the specified key. If the key does not exist: insert the key, with the specified value
update()	Updates the dictionary with the specified key-value pairs
values()	Returns a list of all the values in the dictionary