

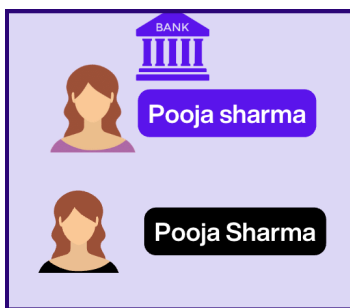


Python Dictionary for Beginners

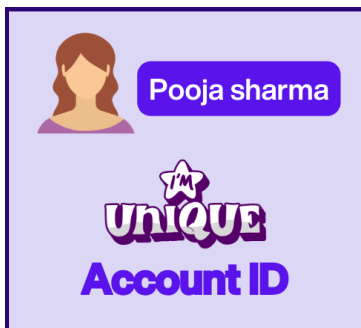
By LearnWithBhawana

What is a Python Dictionary?

A Python dictionary is like a real-world bank record system. Let's say two people have the same name: '**Pooja Sharma**'.



To avoid confusion, banks assign a unique Account ID.



Similarly, in Python, a dictionary stores data as **key-value pairs** where the key is unique.



Example: Bank Account of Pooja Sharma

```
account = {'name': 'Pooja', 'age': 25, 'address': 'Delhi'}
```

```
In [15]: account = {  
    'name': 'Pooja',  
    'age': 25,  
    'address': 'Delhi'  
}  
  
print(account)  
  
{'name': 'Pooja', 'age': 25, 'address': 'Delhi'}
```

Here, '**name**', '**age**', and '**address**' are the keys and the information about Pooja Sharma are the values.

Adding More Info”

`account['Bank'] = 'HDFC'`

```
In [18]: account = {  
    'name': 'Pooja',  
    'age': 25,  
    'address': 'Delhi'  
}  
  
account['Bank'] = 'HDFC'  
print(account)  
  
{'name': 'Pooja', 'age': 25, 'address': 'Delhi', 'Bank': 'HDFC'}
```

Dictionary Methods:

Use these helpful methods to explore your dictionary:

- `.keys()`: Shows all keys

`account.keys() -> ['name', 'age', 'address', 'Bank']`

```
In [20]: account = {  
    'name': 'Pooja',  
    'age': 25,  
    'address': 'Delhi'  
}  
  
account['Bank'] = 'HDFC'  
print(account.keys())  
  
dict_keys(['name', 'age', 'address', 'Bank'])
```

- `.values()`: Shows all values

`account.values() -> ['Pooja', 25, 'Delhi', 'HDFC']`

```
In [21]: account = {  
    'name': 'Pooja',  
    'age': 25,  
    'address': 'Delhi'  
}  
  
account['Bank'] = 'HDFC'  
print(account.values())  
  
dict_values(['Pooja', 25, 'Delhi', 'HDFC'])
```

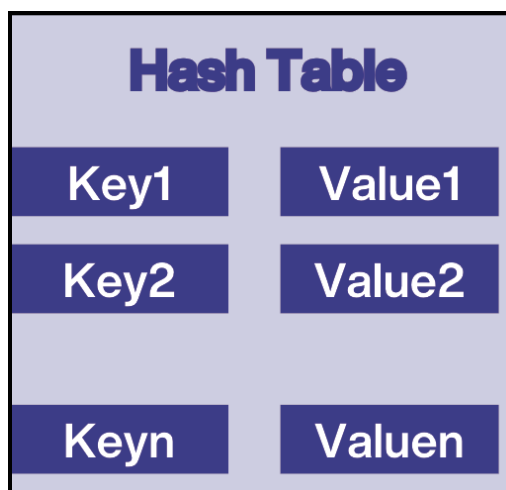
- .items(): Shows key-value pairs

account.items() -> [('name', 'Pooja'), ('age', 25), ...]

```
In [22]: account = {  
         'name': 'Pooja',  
         'age': 25,  
         'address': 'Delhi'  
       }  
  
         account['Bank'] = 'HDFC'  
  
         print(account.items())  
  
dict_items([('name', 'Pooja'), ('age', 25), ('address', 'Delhi'), ('Bank', 'HDFC')])
```

How is Dictionary Stored in Memory?

Python uses a hash table internally to store dictionaries. Each key is hashed and mapped directly to its value in memory, which makes lookups super fast!



Useful Tips



- Keys must be unique
- Keys must be immutable (like strings, numbers, tuples)
- Values can be anything - even lists or other dictionaries
- Use dictionaries when you need quick lookup, like a mini-database
- Empty dictionary: { }

