

Ch 5: Dictionary and sets

`d1 = {"Key": "value", "language": "Python"}` [Dictionary is also a datatype in Python]

This is basically a collection of key value pairs.

`d1["Key"]` → "value"

→ This is case sensitive `d1["lAnguAgE"]` ⇒ error

* Lists and tuples are indexed but sets & dictionaries aren't

`d1[0]` → KeyError

* The key can be a variable name or integer or floating point or boolean but not a special character or reserved keyword or function.

⇒ `d1["newKey"] = "newValue"` → This pair gets added into d1.

`d2 = d1`

`d2["pip"] = "python"`

`print(d1)` → d1 gets modified on changing d2

⇒ `d2 = d1.copy()` → It created an individual copy of d1. Now you can work safely.

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A dictionary can be added inside dictionary.

```
d3 = {"Key": "value",  
      "Language": "Python",  
      "Python": {"cv2": "image",  
                  "tkinter": "gui"},  
      }
```

`print(d3["Python"]["cv2"])` → image

- `d3.update({"Location": "Mars"})` → This pair gets added into d3
 - `d3.keys()` → Returns all keys in dictionary
 - `d3.values()` → Returns all values of dictionary
 - `d3.items()` → Returns a list of tuples containing keys and values.
 - `d3.get("Key") = value`
- * If the key is not present, this function returns None.
- `d3.clear()` → The dictionary gets cleared
 - `d3.pop("Key")` → Remove key and its corresponding value from d3.
 - `d3.popitem()` → Removes the last key and value pair from dictionary

+ more on internet

◻ Sets

A set is a collection of well defined distinct objects containing only unique values.

These are much similar to sets in Mathematics.

$s1 = \{2, 3, 5, 7, 11\}$ → this is also a datatype

$s2 = \{3, 3, 3, 3\}$

`print(s2)` → $\{3\}$

empty-set = set() → constructor for an empty set

* List / tuple can be changed into set.

* Their values can't be changed. $s1[0] = 74$ is wrong

* These are un-indexed.

◻ Functions :

1. `len(s1)` → Returns the cardinal number of set.

2. `s1.add(13)` → $\{2, 3, 5, 7, 11\}$ When you use this more times, 13 is added only once

3. `s1.remove(11)` → 11 gets removed from set.

$s2 = \{5, 6, 8, 10, 11, 15\}$

4. `s1.union(s2)` → $\{2, 3, 5, 6, 7, 8, 10, 11, 15\}$

`print(d1 | d2)` → `{ "one": 1,`
`"two": 2,`
`"three": 3 }`