Python Programming

Dict 2

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Indexing dict values

```
dict = {
    'mostafa' : 'saad',
    1 : [1, 5, 7, 9],
    3 : [[3, 7], [8, 9, 10]]
}

print(dict['mostafa'])      # saad
print(dict['mostafa'][-1])  # d
print(dict[1][1])           # 5
print(dict[3][1][2])        # 10
```

Set default

```
dict = {
    int: [6, 9, 10],
    float : 10,
    6: 20,
    6: 70,
    6: 80,
}
print(dict[float])  # 10    observe we can use data types, as they are immutable
print(dict[6])      # 80    mutliple same keys: last value is used
#print(dict[7])     # KeyError: 7

# setdefault: returns the value of the item with the specified key.
# If the key does not exist, insert the key, with the specified value
print(dict.setdefault(6, -8))   # 80
print(dict.setdefault(7, 20))   # 20
print(dict[7])      # 20
```

Membership Operator

```
dict = {
    -1200001 : 'mostafa',
    'ziad' : 25.5,
    (4, 6) : [5, 8, 9],
}

print('ziad' in dict)    # True
print(100 in dict)       # False

#if dict[7] == 5:    # KeyError: 7
#    pass

if 7 in dict and dict[7] == 5:
    pass    # short-circuit evaluation
```

Get method

```
dict = {
    -1200001 : 'mostafa',
    'ziad' : 25.5,
    (4, 6) : [5, 8, 9],
}

print(dict.get(7))          # None
print(dict.get(7, 15))      # 15    (return default val if not exist)
print(7 in dict)            # False
print(dict.get((4, 6)))     # [5, 8, 9]

dict.clear()        # remove all keys

```

Popitem method

```
dict = {'x': 11, 'b': 22, 'y': 30}
dict['a'] = 33

while dict:
    print(dict.popitem())
"""
removes the last key-value pair added from d
    and returns it as a tuple:
('a', 33)
('y', 30)
('b', 22)
('x', 11)
"""
```

Time Complexity

Operation	Average Case	Amortized Worst Case
k in d	O(1)	O(n)
Copy[3]	O(n)	O(n)
Get Item	O(1)	O(n)
Set Item[1]	O(1)	O(n)
Delete Item	O(1)	O(n)
Iteration[3]	O(n)	O(n)

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"Acquire knowledge and impart it to the people."

"Seek knowledge from the Cradle to the Grave."