Dictionaries in Python

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Dictionaries

- A dictionary is similar to a list, in that it is a collection of items.
- Unlike lists, the order of the items doesn't matter.
- Dictionary elements are not identified by offset indicing as seen in lists (0,1,2..).
- Instead, in dictionaries, the items are *key-value* pairs and they are uniquely identified by the keys as they are unique.
- The keys are usually of String type, but they can be any immutable type in Python as integers, booleans, floats and tuples.
- Dictionaries are mutable.

Creating a Dictionary

Dictionaries can be created as follows:

```
# Creating an empty dictionary
empty_dict = {}
print(empty_dict)
{}
# Creating a dictionary with key-value pairs.
capitals={'New York':'Albany',
'California':'Sacramento'}
print(capitals)
{'California': 'Sacramento',
'New York': 'Albany'}
```

Converting other Sequences into Dictionaries

Other Sequence Types can be converted to Dictionary objects as follows:

```
# A list of two-item tuples:
my_tuple = [ ('a', 'b'), ('c', 'd'),
('e', 'f') ]
my_dict = dict(my_tuple)
print(my_dict)
{'a': 'b', 'c': 'd', 'e': 'f'}

# A list of two-item lists:
my_list = ( ['a', 'b'], ['c', 'd'], ['e', 'f'] )
new_dict = dict(my_list)
print(new_dict)
{'c': 'd', 'a': 'b', 'e': 'f'}
```

Continued..

```
# A list of two-character strings:
my_str_list = [ ’ab’, ’cd’, ’ef’ ]
my_dict = dict(my_str_list)
my_dict
{’a’: ’b’, ’c’: ’d’, ’e’: ’f’}

# A tuple of two-character strings:
my_str_tuple = ( ’ab’, ’cd’, ’ef’ )
my_dict = dict(my_str_tuple)
my_dict
{’a’: ’b’, ’c’: ’d’, ’e’: ’f’}
```

It is to be noted that this works only for two-item sequences. For more than 2, an exception will be thrown.

Operations in Dictionaries

- Adding and modifying key-value pairs.
- Combine Dictionaries with Update().
- Deleting items.
- Deleting all items using clear().
- Membership test.
- Fetching items from the dictionary.
- Assigning using assignment sign and by copying.

More Examples in Dictionaries

More code examples are available at –
`https://github.com/vivek14632/Python-Workshop/tree/master/Introducing%20Python/Chapter%203`

Exercise

Create a dictionary with your name, address and fetch your zip code from the dictionary object.

Summary

- We learned a very important sequence data structures in Python, the Dictionary type.
- We learned the different capabilities it provides and how it differ from Lists and Tuples.
- We learned the different operations that could be performed on/with Dictionaries.