

DICTIONARY

A dictionary in Python is an object that stores a collection of data. Each element has two parts: a key and a value. You use a key to locate a specific value. The values in a dictionary can be objects of any type (including list), but the keys can only be strings, integers, floating-point values

DICTIONARY VS LIST

	List	Dictionary
Keys	Numbers (indices): 0, 1, 2, 3, ...	Numbers, Characters, Strings
Notation	[] (square brackets)	{ } (curly brackets)
Non-empty	list = [value1, value2]	dictionary = {key1 : value1, key2 : value2}
Print out	Always in particular order	Not in any particular order

(*) Creating an empty dictionary

```
dictionary = { }
```

(*) Creating a non-empty dictionary

In the very simple case, each pair of members of a dictionary need a key and a value separated with a colon (:).

Different members are separated with a comma (,)

```
dictionary = { 'Sunday' : 'Jack', 'Monday' : 'Joan' }
```

(*) Retrieving a value from dictionary

```
dictionary [ key ]
```

(*) Adding element(s) to an existing dictionary

```
dictionary[ key ] = value
```

(*) Deleting elements based on key

```
del dictionary[ key ]
```

(*) Getting the number of elements

```
len( dictionary )
```

SOME DICTIONARY METHODS

(*) Clear / delete all elements in a dictionary

```
dictionary.clear( )
```

(*) Getting/retrieving a value from a dictionary

```
dictionary.get(key, default)
```

where default (e.g. the words 'Not found') is returned when the key is not found.
This is an alternative to the [] operator for getting a value from a dictionary

(*) Print all contents (keys and values) of a dictionary (horizontally)

```
print ( dictionary )
```

(*) Print/return keys and their associated values (horizontally)

```
dictionary.items( )
```

(*) Print/return keys only (horizontally)

```
dictionary.keys( )
```

(*) print/return values only (horizontally)

```
dictionary.values( )
```

(*) Print keys and values with for loop (vertically)

```
for key, value in dictionary.items( ):
    print (key, value)
```

(*) Print keys with for loop (vertically)

```
for key in dictionary.keys( ):
    print( key )
```

(*) Print values with for loop (vertically)

```
for val in dictionary.values( ):
    print (val)
```

(*) Copy dictionary1 to dictionary2

```
dictionary2 = dictionary1.copy( )
```

(*) Print the maximum/minimum key of a dictionary

```
print (max(dictionary))
print (min(dictionary))
```

(*) Print the maximum/minimum value of a dictionary

```
print(max(dictionary.values()))
```

```
print(min(dictionary.values()))
```

(*) Print the key with the maximum/minimum value

```
print(max(dictionary, key=dictionary.get))
```

```
print(min(dictionary, key=dictionary.get))
```