**Dictionary**

Stores key value pair

Each key is separated from its value by a colon (:)

The items are separated by commas

The whole thing is enclosed in curly braces

An empty dictionary {}

Keys are unique within a dictionary while values may not be.

The keys must be of an immutable data type such as strings, numbers, or tuples.

The values of a dictionary can be of any type.

# Accessing Values in Dictionary

dict1 = {'Name': 'Zara', 'Age': 7, 10: 'First'}

dict2 = {'Name': 'Zara', 'Age': 7, 'Class': 'First'}

print ("dict1['Name']: ", dict1['Name'])

print ("dict1['Age']: ", dict1['Age'])

print ("dict1[10]: ", dict1[10])

#print ("dict1['Nothing']: ", dict1['Nothing']) # KeyError: 'Nothing'

Output:

dict1['Name']: Zara

dict1['Age']: 7

dict1[10]: First

# Updating Dictionary

Modify by adding a new entry or a key-value pair

dict = {'Name': 'Zara', 'Age': 7, 'Class': 'First'}

print ("dict['Name']: ", dict['Name'])

print ("dict['Age']: ", dict['Age'])

dict['Name'] = 'Sara'

dict['Age'] = 10

dict['FavSub'] = 'Math'

print ("dict['Name']: ", dict['Name'])

print ("dict['Age']: ", dict['Age'])

print ("dict['FavSub']: ", dict['FavSub'])

Output:

dict['Name']: Zara

dict['Age']: 7

dict['Name']: Sara

dict['Age']: 10

dict['FavSub']: Math

# Delete Dictionary Elements

remove individual dictionary elements

clear the entire contents of a dictionary

delete entire dictionary in a single operation

dict = {'Name': 'Zara', 'Age': 7, 'Class': 'First'}

print ("dict['Name']: ", dict['Name'])

print ("dict['Age']: ", dict['Age'])

del dict['Name'] # remove entry with key 'Name'

#print ("dict['Name']: ", dict['Name']) # KeyError: 'Name'

print ("dict['Age']: ", dict['Age'])

dict.clear() # remove all entries in dict

#print ("dict['Name']: ", dict['Name']) # KeyError: 'Name'

#print ("dict['Age']: ", dict['Age']) # KeyError: 'Age'

del dict # delete entire dictionary

#print ("dict['Name']: ", dict['Name']) # TypeError: 'type' object is not subscriptable

#print ("dict['Age']: ", dict['Age']) # TypeError: 'type' object is not subscriptable

Output:

dict['Name']: Zara

dict['Age']: 7

dict['Age']: 7

# Properties of Dictionary Keys

1. More than one entry per key is not allowed. (No duplicate Key)

When duplicate keys are encountered during assignment, the last assignment wins.

1. Keys must be immutable. This means you can use strings, numbers or tuples as dictionary keys but something like ['key'] is not allowed.

dict = {'Name': 'Zara', 'Age': 7, 'Name': 'Manni'}

print("dict['Name']: ", dict['Name'])

Output:

dict['Name']: Manni

#dict = {['Name']: 'Zara', 'Age': 7} # TypeError: unhashable type: 'list'

print ("dict['Name']: ", dict['Name'])

Error:

TypeError: unhashable type: 'list'