Dictionary

In python, dictionary is similar to hash or maps in other languages. It consists of key value pairs. The value can be accessed by unique key in the dictionary.

Operation and manipulation

```python
#Operations and manipulation
dictionary= { "Name":"Rajat","Age":23}
print (dictionary)
# Indexing
print (dictionary["Name"])
# Membership  (work only on keys)
if "Name" in dictionary:
    print (True)
# Add a value
dictionary.update ( { "DOB":"03-03-1995"} )
print (dictionary)
# Remove any value
dictionary.pop ("Age")
print (dictionary)
# Length of a dictionary
print (len (dictionary) )
# Print keys of dictionary
print (dictionary.keys () )
# Print values of dictionary
print (dictionary.values () )
# Returning a tuple of elements from dictionary
print (dictionary.items () )
# Clear a dictionary
dictionary.clear ()
print (dictionary)
```

```
Python 3.6.4  (v3.6.4:d48eceb, Dec 19 2017, 06:04:45)  [MSC
Type "copyright", "credits" or "license ()  " for more information
>>>
================= RESTART: D:/Documents/Python/Dictio
 { 'Name': 'Rajat', 'Age': 23}
Rajat
True
 { 'Name': 'Rajat', 'Age': 23, 'DOB': '03-03-1995'}
 { 'Name': 'Rajat', 'DOB': '03-03-1995'}
2
dict__keys (['Name', 'DOB'])
dict__values (['Rajat', '03-03-1995'])
dict__items ([ ('Name', 'Rajat') , ('DOB', '03-03-1995') ])
 {}
>>>
```

Program to concatenate dictionaries to form a new one


```
# Program to concatenate following dictionaries to create a new one
# A dictionary can contain unique keys
# Use different key values in different dictionary
dic1= { "Name1":"Rajat", "Age1":24}
dic2= { "Name2":"Himanshu","Age2":22}
dic3= {}
for d in  (dic1, dic2, dic3) :
   dic3.update (d)
print (dic3)
```

```
Python 3.6.4  (v3.6.4:d48eceb, Dec 19 2017, 06:04:45)   [MSC
Type "copyright", "credits" or "license ()  " for more information.
>>>
========== RESTART: D:/Documents/Python/Dictionary__conc
 { 'Name1': 'Rajat', 'Age1': 24, 'Name2': 'Himanshu', 'Age2': 22}
>>>
```

Program to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x).

Dictionary_contain_no_inform_nxn.py - D:/Documents/Python/Dictionary_contain_no_inform_nxn.py (3.6

File   Edit   Format   Run   Options   Window   Help

```python
# Program to generate and print a dictionary
# that contains a number  (between 1 and n)   in the form  (x, x*x)  .
n=int ( input ( "Input a number ") )
d = dict ()
for x in range  (1,n+1)  :
    d[x]=x*x
print  (d)
```

Python 3.6.4 Shell

File   Edit   Shell   Debug   Options   Window   Help

```
Python 3.6.4  (v3.6.4:d48eceb, Dec 19 2017, 06:04
Type "copyright", "credits" or "license () " for more
>>>
====== RESTART: D:/Documents/Python/Dictionary
Input a number 5
 { 1: 1, 2: 4, 3: 9, 4: 16, 5: 25}
>>>
```

Program to map two lists into dictionary

File   Edit   Format   Run   Options   Window   Help

```
# Program to map two lists into a dictionary.
keys = ['red', 'green', 'blue']
values = ['#FF0000','#008000', '#0000FF']
color_dictionary = dict ( zip ( keys, values ) )
print ( color_dictionary)
```

Python 3.6.4 Shell

File   Edit   Shell   Debug   Options   Window   Help

```
Python 3.6.4   (v3.6.4:d48eceb, Dec 19 2017, 06:04:45)   [MSC v.
Type "copyright", "credits" or "license ()  " for more information.
>>>
========== RESTART: D:/Documents/Python/Dictionary_map_
 { 'red': '#FF0000', 'green': '#008000', 'blue': '#0000FF'}
>>>
```

Program to sort a dictionary by key

File Edit Format Run Options Window Help

```python
# Program to sort a dictionary by key
color_dict = { 'Mango':'Red-Green',
    'Orangle':'Orange',
    'Apple':'Red',
    'Banana':'Yellow'}

for key in sorted (color_dict) :
    print (key, color_dict[key])
```

Python 3.6.4 Shell

File Edit Shell Debug Options Window Help

```
Python 3.6.4  (v3.6.4:d48eceb, Dec 19 2017, 06:04:45)  [MSC v.1900 32 bit
Type "copyright", "credits" or "license () " for more information.
>>>
=========== RESTART: D:/Documents/Python/Dictionary__sorting__key.py
Apple Red
Banana Yellow
Mango Red-Green
Orangle Orange
```

Program to remove duplicates from Dictionary

```
Dictionary_remove_duplicates.py - D:/Documents/Python/Dictionary_rem
File  Edit  Format  Run  Options  Window  Help

student__data = { 'id1':
    { 'name': 'Ankit',
    'class': 'V',
    'address': 'Roorkee'
    } ,
'id2':
    { 'name': 'Rajat',
    'class': 'VI',
    'address': 'Haridwar'
    } ,
'id3':
    { 'name': 'Ankit',
    'class': 'V',
    'address': 'Roorkee'
    } ,
}
result = {}
for key,value in student__data.items () :
    if value not in result.values () :
        result[key] = value
print (result)
```

```
Python 3.6.4 Shell
File  Edit  Shell  Debug  Options  Window  Help

Python 3.6.4  (v3.6.4:d48eceb, Dec 19 2017, 06:04:45)  [MSC v.1900 32 bit  (Intel) ] on win32
Type "copyright", "credits" or "license ()  " for more information.
>>>
======== RESTART: D:/Documents/Python/Dictionary__remove__duplicates.py ========
 { 'id1':  { 'name': 'Ankit', 'class': 'V', 'address': 'Roorkee'} , 'id2':  { 'name': 'Rajat', 'class': 'VI', 'address':
'Haridwar'} }
>>>
```