Dictionary

-- Dictionary is a Collection of items as a Key-value Pair.

Properties

```
--> Ordered Collection of items.
--> Can Changable (Mutable) & does not allow duplicates.
--> Key can be any Data Type
```

Syntax

In [2]:
```
dict = {"key1":'Value1','key2':'value2'}
```

List to Dict

```
   List                                Dict
index   value                      Key    Value
 0        'a'                       1      'a'
 1        'b'                       2      'b'
 2        'c'                       3      'c'
```

Example

In [5]:
```
Student = {
    'name':'Swadheen',
    'age': 25,
    'nationality': 'Indian',
    'location': 'Cuttack',
    'is_married' : False
}

print(Student)
```

```
{'name': 'Swadheen', 'age': 25, 'nationality': 'Indian', 'location': 'Cuttac
k', 'is_married': False}
```

In [6]:
```
print(type(Student))
```

```
<class 'dict'>
```

print the value of name?

In [7]:
```
print(Student['name'])
```

```
Swadheen
```

In [8]:
```
print(Student["age"])
```

```
25
```

Duplicate insertion of key and updation of value

In [12]:
```
Student['name'] = 'Satyaa'
print(Student['name'])
```

```
Satyaa
```

In [11]:
```
mydict = {
    'brand' : 'Audi',
    'colors': ['Red','Black'],
    'year' : 1989,
    'year' : 2001  # this"ll update the previous key value
}

print(mydict)
```

```
{'brand': 'Audi', 'colors': ['Red', 'Black'], 'year': 2001}
```

Finding the length of dict containing duplicate key

In [13]:
```
len(mydict)
```

Out[13]:
```
3
```

In [17]:
```
print(mydict['colors'])

print('*'*20)

print(len(mydict['colors']))
```

```
['Red', 'Black']
********************
2
```

Loop / itterate over this dict

Method 1

In [24]:
```
for i in mydict:
    print(i,':',mydict[i])
```

```
brand : Audi
colors : ['Red', 'Black']
year : 2001
```

Method 2

In [25]:
```
for key,value in mydict.items():  # .items() -- inbuilt keyword
    print(key,':',value)
```

```
brand : Audi
colors : ['Red', 'Black']
year : 2001
```

Add an item to dict

In [26]:
```
newDict = {
    "name" : 'Swadheen',
    'age' : 26
}

newDict['city'] = 'Cuttack'

print(newDict)
```

```
{'name': 'Swadheen', 'age': 26, 'city': 'Cuttack'}
```

In [28]:
```
newDict['State'] = 'Andaman'

print(newDict)
```

```
{'name': 'Swadheen', 'age': 26, 'city': 'Cuttack', 'State': 'Andaman'}
```

In [29]:
```
newDict.pop('name') # --> It will remove the element with the given key

print(newDict)
```

```
{'age': 26, 'city': 'Cuttack', 'State': 'Andaman'}
```

In [30]:
```
newDict.popitem() # --> It will remove the last inserted element from the dict

print(newDict)
```

```
{'age': 26, 'city': 'Cuttack'}
```

In [31]:
```
newDict.clear() # --> It will empty the complete Dictionary

print(newDict)
```

```
{}
```

In [32]:
```
newDict.popitem() # It will throw an error as the dictionary is empty
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Input In [32], in <cell line: 1>()
----> 1 newDict.popitem()

KeyError: 'popitem(): dictionary is empty'
```

print alphabets and assigned value in given range

In [34]:
```
s = 'abcdefghijklmnopqrstuvwxyz'
N = 5
dict = {}
for i in range(N):
    dict[s[i]] = i+1

for key in dict:
    print(key+'-'+str(dict[key]))
```

```
a-1
b-2
c-3
d-4
e-5
```