Dictionaries in Python

In [1]:

```
f = { 'name':'sachin','age':22,'language':'hindi','height':5.11,'education':'Engineer'}
```

In [2]:

```
print(f.values())
```

```
dict_values(['sachin', 22, 'hindi', 5.11, 'Engineer'])
```

In [4]:

```
s = 'sachin'
h  = hash(s)
k = bin(h)
print(h)
print(k)
```

```
7690198149797640290
0b1101010101110010001001001111001000010110000110111111100001100010
```

In [5]:

```
info = {

    'name':'python',
    'father':'Guido Van Rossum',
    'type' : 'Programming Language',
    'current_version' : 3.7,
    'scope' : {
        'web' : [ 'flask','django','pyramid','web2py'],
        'gui' : [ 'tkinter', 'wxpython','kivi',],
        'automation' : [ 'ansible','puppet','openstack'],
        'bigdata' : [ 'pyspark'],
        'data_science' : [ 'pandas','numpy',],
        'machine_learning' : ['sci-py','scikit-learn','teserflow']

    }

        }
```

In [9]:

```
print(info)
```

```
{'name': 'python', 'father': 'Guido Van Rossum', 'type': 'Programming Language',
'current_version': 3.7, 'scope': {'web': ['flask', 'django', 'pyramid', 'web2py'], 'gui':
['tkinter', 'wxpython', 'kivi'], 'automation': ['ansible', 'puppet', 'openstack'], 'bigdata':
['pyspark'], 'data_science': ['pandas', 'numpy'], 'machine_learning': ['sci-py', 'scikit-learn', '
teserflow']}}
```

In [10]:

```
from pprint import pprint
pprint(info)
```

```
{'current_version': 3.7,
 'father': 'Guido Van Rossum',
 'name': 'python',
 'scope': {'automation': ['ansible', 'puppet', 'openstack'],
           'bigdata': ['pyspark'],
           'data_science': ['pandas', 'numpy'],
           'gui': ['tkinter', 'wxpython', 'kivi'],
```

```
            'machine_learning': ['sci-py', 'scikit-learn', 'teserflow'],
            'web': ['flask', 'django', 'pyramid', 'web2py']},
 'type': 'Programming Language'}
```

In [11]:

```
info['name']
```

Out[11]:

```
'python'
```

In [12]:

```
info['current_version']
```

Out[12]:

```
3.7
```

In [13]:

```
info['scope']
```

Out[13]:

```
{'web': ['flask', 'django', 'pyramid', 'web2py'],
 'gui': ['tkinter', 'wxpython', 'kivi'],
 'automation': ['ansible', 'puppet', 'openstack'],
 'bigdata': ['pyspark'],
 'data_science': ['pandas', 'numpy'],
 'machine_learning': ['sci-py', 'scikit-learn', 'teserflow']}
```

In [16]:

```
info['scope']['web'][1:]
```

Out[16]:

```
['django', 'pyramid', 'web2py']
```

In [19]:

```
info = {

    'name' : "sachin yadav",
    'age' : 22,
    'education' : {
        'matric' : ['RBSE',88.00],
        'high_school' : ['RBSE',82.40],
        'garduation'  : ['RTU','B.tech computer science',74],
                    },
    'favourite_things' :
                    {
                        'actor':'wahtever',
                        'actress' : [ 'one','two','three'],
                        'game' : [ 'cricket','footbal',],
                        'color' : 'mycolor',

                    }
        }
```

In [20]:

```
info['education']
```

Out[20]:

```
{'matric': ['RBSE', 88.0],
```

```
 'high_school': ['RBSE', 82.4],
 'garduation': ['RTU', 'B.tech computer science', 74]}
```

In [22]:

```
info['education']['garduation']
```

Out[22]:

```
['RTU', 'B.tech computer science', 74]
```

In [23]:

```
info['education']['garduation'][2]
```

Out[23]:

```
74
```

In [25]:

```
python = { 'name':'python','version':3.7,'author':'Gudio Van Rossum'}
```

In [27]:

```
python['name'] = 'PYHTON'
```

In [30]:

```
python['name']
```

Out[30]:

```
'PYHTON'
```

In [29]:

```
python['Name'] = 'python'
```

In [31]:

```
python['Name']
```

Out[31]:

```
'python'
```

In [32]:

```
print(python)
```

```
{'name': 'PYHTON', 'version': 3.7, 'author': 'Gudio Van Rossum', 'Name': 'python'}
```

In [33]:

```
print(dir(python))
```

```
['__class__', '__contains__', '__delattr__', '__delitem__', '__dir__', '__doc__', '__eq__',
'__format__', '__ge__', '__getattribute__', '__getitem__', '__gt__', '__hash__', '__init__', '__in
it_subclass__', '__iter__', '__le__', '__len__', '__lt__', '__ne__', '__new__', '__reduce__',
'__reduce_ex__', '__repr__', '__setattr__', '__setitem__', '__sizeof__', '__str__',
'__subclasshook__', 'clear', 'copy', 'fromkeys', 'get', 'items', 'keys', 'pop', 'popitem',
'setdefault', 'update', 'values']
```

In [35]:

```
python['sachin']
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-35-3907d8678c3f> in <module>()
----> 1 python['sachin']

KeyError: 'sachin'
```

In [39]:

```
print('before')
print(python)
del python['Name']
print('after')
print(python)
```

```
before
{'name': 'PYHTON', 'version': 3.7, 'author': 'Gudio Van Rossum', 'Name': 'python'}
after
{'name': 'PYHTON', 'version': 3.7, 'author': 'Gudio Van Rossum'}
```

In [50]:

```
key = input("What do you want see : ").strip().lower()
key = ''.join(key.split())
python[key]
```

```
What do you want see : sachin

---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-50-1a8f19be03bc> in <module>()
      1 key = input("What do you want see : ").strip().lower()
      2 key = ''.join(key.split())
----> 3 python[key]

KeyError: 'sachin'
```

In [56]:

```
python.get('name','No such key exists')
```

Out[56]:

```
'PYHTON'
```

In [59]:

```
key = input("What do you want see : ").strip().lower()
key = ''.join(key.split())
python.get(key,'No such key exists in our database')
```

```
What do you want see : sachin
```

Out[59]:

```
'No such key exists in our database'
```

In [69]:

```
print(python.items())
```

```
dict_items([('name', 'PYHTON'), ('version', 3.7), ('author', 'Gudio Van Rossum')])
```

In [61]:

```
print(dir(python))
```

```
['__class__', '__contains__', '__delattr__', '__delitem__', '__dir__', '__doc__', '__eq__',
'__format__', '__ge__', '__getattribute__', '__getitem__', '__gt__', '__hash__', '__init__', '__in
it_subclass__', '__iter__', '__le__', '__len__', '__lt__', '__ne__', '__new__', '__reduce__',
'__reduce_ex__', '__repr__', '__setattr__', '__setitem__', '__sizeof__', '__str__',
'__subclasshook__', 'clear', 'copy', 'fromkeys', 'get', 'items', 'keys', 'pop', 'popitem',
'setdefault', 'update', 'values']
```

In [68]:

```
s = "hel  lo    W    o   rld"
k = s.split()
print(k)
''.join(k)
```

```
['hel', 'lo', 'W', 'o', 'rld']
```

Out[68]:

```
'helloWorld'
```

In [70]:

```
python.keys()
```

Out[70]:

```
dict_keys(['name', 'version', 'author'])
```

In [71]:

```
python.values()
```

Out[71]:

```
dict_values(['PYHTON', 3.7, 'Gudio Van Rossum'])
```

In [72]:

```
l1 = [ 'one','two','three','four','five','six']
l2 = [ 'sachin','poonam','jitender','neha','meena','ramwatar']
print(l1)
print(l2)
```

```
['one', 'two', 'three', 'four', 'five', 'six']
['sachin', 'poonam', 'jitender', 'neha', 'meena', 'ramwatar']
```

In [73]:

```
l3 = list(zip(l1,l2))
print(l3)
```

```
[('one', 'sachin'), ('two', 'poonam'), ('three', 'jitender'), ('four', 'neha'), ('five', 'meena'),
('six', 'ramwatar')]
```

In [74]:

```
my_dict = dict(l3)
print(my_dict)
```

```
{'one': 'sachin', 'two': 'poonam', 'three': 'jitender', 'four': 'neha', 'five': 'meena', 'six': 'r
amwatar'}
```

In [75]:

In [75]:

```
k = list(my_dict)
print(k)
```

```
['one', 'two', 'three', 'four', 'five', 'six']
```

In [76]:

```
k = list(my_dict.items())
print(k)
```

```
[('one', 'sachin'), ('two', 'poonam'), ('three', 'jitender'), ('four', 'neha'), ('five', 'meena'),
('six', 'ramwatar')]
```

In [77]:

```
v = list(my_dict.values())
ke = list(my_dict.keys())
kv = list(my_dict.items())
```

In [78]:

```
print(ke)
print(v)
print(kv)
```

```
['one', 'two', 'three', 'four', 'five', 'six']
['sachin', 'poonam', 'jitender', 'neha', 'meena', 'ramwatar']
[('one', 'sachin'), ('two', 'poonam'), ('three', 'jitender'), ('four', 'neha'), ('five', 'meena'),
('six', 'ramwatar')]
```

In [81]:

```
print(dir(python))
```

```
['__class__', '__contains__', '__delattr__', '__delitem__', '__dir__', '__doc__', '__eq__',
'__format__', '__ge__', '__getattribute__', '__getitem__', '__gt__', '__hash__', '__init__', '__in
it_subclass__', '__iter__', '__le__', '__len__', '__lt__', '__ne__', '__new__', '__reduce__',
'__reduce_ex__', '__repr__', '__setattr__', '__setitem__', '__sizeof__', '__str__',
'__subclasshook__', 'clear', 'copy', 'fromkeys', 'get', 'items', 'keys', 'pop', 'popitem',
'setdefault', 'update', 'values']
```

In [82]:

```
print(python.pop.__doc__)
```

```
D.pop(k[,d]) -> v, remove specified key and return the corresponding value.
If key is not found, d is returned if given, otherwise KeyError is raised
```

In [85]:

```
print(python)
value= python.pop('name')
print("Value is removed from dictionary is ",value)
print(python)
```

```
{'name': 'PYHTON', 'version': 3.7, 'author': 'Gudio Van Rossum'}
Value is removed from dictionary is  PYHTON
{'version': 3.7, 'author': 'Gudio Van Rossum'}
```

In [87]:

```
python.pop('sachin','No Key available')
```

Out[87]:

'No Key available'

In [88]:

```
print(dir(python))
```

['__class__', '__contains__', '__delattr__', '__delitem__', '__dir__', '__doc__', '__eq__', '__format__', '__ge__', '__getattribute__', '__getitem__', '__gt__', '__hash__', '__init__', '__init_subclass__', '__iter__', '__le__', '__len__', '__lt__', '__ne__', '__new__', '__reduce__', '__reduce_ex__', '__repr__', '__setattr__', '__setitem__', '__sizeof__', '__str__', '__subclasshook__', 'clear', 'copy', 'fromkeys', 'get', 'items', 'keys', 'pop', 'popitem', 'setdefault', 'update', 'values']

In [89]:

```
python.popitem()
```

Out[89]:

('author', 'Gudio Van Rossum')

In [90]:

```
python['sachin'] = 'mr. coder'
python['name'] = 'python'
print(python)
```

{'version': 3.7, 'sachin': 'mr. coder', 'name': 'python'}

In [91]:

```
python['name'] = 'World"s best language'
```

In [92]:

```
python
```

Out[92]:

{'version': 3.7, 'sachin': 'mr. coder', 'name': 'World"s best language'}

In [93]:

```
python['name']  = 'python'
print(python)
```

{'version': 3.7, 'sachin': 'mr. coder', 'name': 'python'}

In [94]:

```
python.setdefault('rajat','i am the owner of Grras')
```

Out[94]:

'i am the owner of Grras'

In [95]:

```
print(python)
```

{'version': 3.7, 'sachin': 'mr. coder', 'name': 'python', 'rajat': 'i am the owner of Grras'}

In [96]:

```
python.setdefault('name','don of the world')
```

Out[96]:

```
'python'
```

In [97]:

```
print(python)
```

```
{'version': 3.7, 'sachin': 'mr. coder', 'name': 'python', 'rajat': 'i am the owner of Grras'}
```

In [98]:

```
info = { 'scope' : 'world-wide','name':'PYTHON',}
```

In [99]:

```
print(info)
print(python)
```

```
{'scope': 'world-wide', 'name': 'PYTHON'}
{'version': 3.7, 'sachin': 'mr. coder', 'name': 'python', 'rajat': 'i am the owner of Grras'}
```

In [100]:

```
python.update(info)
```

In [101]:

```
python
```

Out[101]:

```
{'version': 3.7,
 'sachin': 'mr. coder',
 'name': 'PYTHON',
 'rajat': 'i am the owner of Grras',
 'scope': 'world-wide'}
```

In [15]:

```
info
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-15-886ead46232a> in <module>()
----> 1 info

NameError: name 'info' is not defined
```

In [103]:

```
info.update(python)
info
```

Out[103]:

```
{'scope': 'world-wide',
 'name': 'PYTHON',
 'version': 3.7,
 'sachin': 'mr. coder',
 'rajat': 'i am the owner of Grras'}
```

In [1]:

```
#list way
```

```
#list way
student = [
    [1001,'sachin',999999,'python@123',True],
    [1002,'jitendra',6500,'redhat@8921',False],
    [1003,'meena',75000,'password',False],
]
```

In [2]:

```
student[0]
```

Out[2]:

```
[1001, 'sachin', 999999, 'python@123', True]
```

In [4]:

```
#anthor way of list represet
student = [
            [1001,1002,1003,1004,1005,1006],
            ['sachin','jitendra','meena','ramawatar','poonam','neha'],
            [9999,6500,5677,34223,56434,34565434],
            ['redhat','Asimov','python@123','password','myworld','iamking'],
            [True,False,False,True,False,True]
         ]
```

In [10]:

```
acc_num = int(input("Enter your account number : "))
index = student[0].index(acc_num)
print("Your name is ",student[1][index])
print("Your Balance is ",student[2][index])
print("Your Password is ",student[3][index])
print("Your Loan Status is ",student[4][index])
```

```
Enter your account number : 1005
Your name is  poonam
Your Balance is  56434
Your Password is  myworld
Your Loan Status is  False
```

In [13]:

```
#dictionary implementation
#anthor way of list represet
student = {
    'acc'  :  [1001,1002,1003,1004,1005,1006],
    'name' :  ['sachin','jitendra','meena','ramawatar','poonam','neha'],
    'bal'  :  [9999,6500,5677,34223,56434,34565434],
'password' :  ['redhat','Asimov','python@123','password','myworld','iamking'],
    'loan' :  [True,False,False,True,False,True]
    }
```

In [14]:

```
acc_num = int(input("Enter your account number : "))
index = student['acc'].index(acc_num)
print("Your name is ",student['name'][index])
print("Your Balance is ",student['bal'][index])
print("Your Password is ",student['password'][index])
print("Your Loan Status is ",student['loan'][index])
```

```
Enter your account number : 1002
Your name is  jitendra
Your Balance is  6500
Your Password is  Asimov
Your Loan Status is  False
```

In [16]:

```
student = {
    1001 : { 'name':'sachin','bal':6500,'password':'redhat@3496'},
    1002 : { 'name':'meena','bal':7500000,'password':'@123abcd!','loan':True },
    1003 : { 'name':'poonam','bal':89234,'password':'1384y3243',},
    1004 : { 'name':'jitendra','bal':734234,'password':'hello',},
    1005 : { 'name':'sudharshan','bal':897983,'password':'bye'},
    1006 : { 'name':'ramawatar','bal':95000,'password':'goodboy'}
           }
```

In [17]:

```
name = input("Enter your name : ")
acc_no = 1007
password = input("Password : ")
bal = int(input("Enter your balance : "))
info = { 'name':name,'bal':bal,'password':password}
student.update({1007:info})
```

```
Enter your name : neha
Password : mynameisneha
Enter your balance : 10000
```

In [18]:

```
from pprint import pprint
pprint(student)
```

```
{1001: {'bal': 6500, 'name': 'sachin', 'password': 'redhat@3496'},
 1002: {'bal': 7500000, 'loan': True, 'name': 'meena', 'password': '@123abcd!'},
 1003: {'bal': 89234, 'name': 'poonam', 'password': '1384y3243'},
 1004: {'bal': 734234, 'name': 'jitendra', 'password': 'hello'},
 1005: {'bal': 897983, 'name': 'sudharshan', 'password': 'bye'},
 1006: {'bal': 95000, 'name': 'ramawatar', 'password': 'goodboy'},
 1007: {'bal': 10000, 'name': 'neha', 'password': 'mynameisneha'}}
```

In [19]:

```
print(student)
```

```
{1001: {'name': 'sachin', 'bal': 6500, 'password': 'redhat@3496'}, 1002: {'name': 'meena', 'bal':
7500000, 'password': '@123abcd!', 'loan': True}, 1003: {'name': 'poonam', 'bal': 89234,
'password': '1384y3243'}, 1004: {'name': 'jitendra', 'bal': 734234, 'password': 'hello'}, 1005: {'
name': 'sudharshan', 'bal': 897983, 'password': 'bye'}, 1006: {'name': 'ramawatar', 'bal': 95000,
'password': 'goodboy'}, 1007: {'name': 'neha', 'bal': 10000, 'password': 'mynameisneha'}}
```

In [23]:

```
from getpass import getpass
password = getpass("Passoword : ")
print(password)
```

```
Passoword : ········
helloworldal;ksjdfk
```

In [ ]:

```
```