In [1]:
```
mydict=dict{}
mydict
```

```
  Cell In[1], line 1
    mydict=dict{}
               ^
SyntaxError: invalid syntax
```

In [7]:
```
mydict=dict()
type(mydict)
```

Out[7]:
```
dict
```

In [ ]:
```
myset=set()
type(myset)
```

In [4]:
```
myset={'one'}
myset
```

Out[4]:
```
{'one'}
```

In [5]:
```
type(myset)
```

Out[5]:
```
set
```

In [8]:
```
myset=set('2','3','4')
type(myset)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[8], line 1
----> 1 myset=set('2','3','4')
      2 type(myset)

TypeError: set expected at most 1 argument, got 3
```

In [9]:
```
myset=set('3')
myset
```

Out[9]:
```
{'3'}
```

In [10]:
```
type(myset)
```

Out[10]:
```
set
```

In [11]:
```
myset.add('4')
myset
```

Out[11]:
```
{'3', '4'}
```

Dictionary

In [12]:
```
mydict={}
```

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

Out[13]:
```
dict
```

In [14]:
```
mydict=dict()
mydict
```

Out[14]:
```
{}
```

In [15]:
```
type(mydict)
```

Out[15]:
```
dict
```

In [16]:
```
mydict={1:'one',2:'two',3:'three'}
mydict
```

Out[16]:
```
{1: 'one', 2: 'two', 3: 'three'}
```

In [17]:
```
mydict=dict({1:'one',2:'two',3:'three'})
mydict
```

Out[17]:
```
{1: 'one', 2: 'two', 3: 'three'}
```

In [18]:
```
mydict=dict(1:'one',2:'two',3:'three')
mydict
```

```
  Cell In[18], line 1
    mydict=dict(1:'one',2:'two',3:'three')
                ^
SyntaxError: invalid syntax
```

In [19]:
```
mydict
```

Out[19]:
```
{1: 'one', 2: 'two', 3: 'three'}
```

In [20]:
```
mydict={'A':'one','B':'two','c':'three'}
mydict
```

Out[20]:
```
{'A': 'one', 'B': 'two', 'c': 'three'}
```

In [21]:
```
mydict=dict({1:'one','A':'two',3:'three'})
mydict
```

Out[21]:
```
{1: 'one', 'A': 'two', 3: 'three'}
```

In [22]:
```
mydict.keys()
```

Out[22]:
```
dict_keys([1, 'A', 3])
```

In [23]:
```
mydict.values()
```

Out[23]:
```
dict_values(['one', 'two', 'three'])
```

In [24]:
```
mydict.items()
```

Out[24]:
```
dict_items([(1, 'one'), ('A', 'two'), (3, 'three')])
```

In [25]:
```
mydict={1:'one',2:'two','A':['asif','john','Maria']}
```

In [26]:
```
mydict
```

Out[26]:
```
{1: 'one', 2: 'two', 'A': ['asif', 'john', 'Maria']}
```

In [27]:
```
mydict[0]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[27], line 1
----> 1 mydict[0]

KeyError: 0
```

In [28]:
```
mydict[1]
```

Out[28]:
```
'one'
```

In [29]:
```
mydict.items()
```

Out[29]:
```
dict_items([(1, 'one'), (2, 'two'), ('A', ['asif', 'john', 'Maria'])])
```

In [30]:
```
len(mydict)
```

Out[30]:
```
3
```

In [31]:
```
mydict[0]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[31], line 1
----> 1 mydict[0]

KeyError: 0
```

In [32]:
```
mydict[2]
```

Out[32]:
```
'two'
```

In [33]:
```
mydict[3]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[33], line 1
----> 1 mydict[3]

KeyError: 3
```

In [34]:
```
mydict
```

Out[34]:
```
{1: 'one', 2: 'two', 'A': ['asif', 'john', 'Maria']}
```

In [35]:
```
mydict[A]
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[35], line 1
----> 1 mydict[A]

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

In [36]:
```
mydict['A']
```

Out[36]:
```
['asif', 'john', 'Maria']
```

In [37]:
```
mydict['one']
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[37], line 1
----> 1 mydict['one']

KeyError: 'one'
```

In [38]:
```
mydict['two']
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[38], line 1
----> 1 mydict['two']

KeyError: 'two'
```

In [39]:
```
mydict
```

Out[39]:
```
{1: 'one', 2: 'two', 'A': ['asif', 'john', 'Maria']}
```

In [40]:
```
mydict={1:'one',2:'two','A':['asif','john','Maria'],'B':('Bat','cat','hat')}
mydict
```

Out[40]:
```
{1: 'one',
 2: 'two',
 'A': ['asif', 'john', 'Maria'],
 'B': ('Bat', 'cat', 'hat')}
```

In [41]:
```
mydict.items()
```

Out[41]:
```
dict_items([(1, 'one'), (2, 'two'), ('A', ['asif', 'john', 'Maria']), ('B', ('B
at', 'cat', 'hat'))])
```

In [42]:
```
mydict
```

Out[42]:
```
{1: 'one',
 2: 'two',
 'A': ['asif', 'john', 'Maria'],
 'B': ('Bat', 'cat', 'hat')}
```

In [43]:
```
mydict['B']
```

Out[43]:
```
('Bat', 'cat', 'hat')
```

In [44]:
```
keys={'a','b','c','d'}
mydict3=dict.fromkeys(keys)
```

```
mydict3
```

Out[44]:
```
{'a': None, 'c': None, 'b': None, 'd': None}
```

In [45]:
```
keys={'a','b','c','d'}
value=[10,20,30]
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[45]:
```
{'a': [10, 20, 30], 'c': [10, 20, 30], 'b': [10, 20, 30], 'd': [10, 20, 30]}
```

In [46]:
```
keys={'a','b','c','d'}
value=[10,20,30]
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[46]:
```
{'a': [10, 20, 30], 'c': [10, 20, 30], 'b': [10, 20, 30], 'd': [10, 20, 30]}
```

In [47]:
```
keys={'a','b','c','d'}
value=[10]
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[47]:
```
{'a': [10], 'c': [10], 'b': [10], 'd': [10]}
```

In [48]:
```
keys={'a','b','c','d'}
value='1'
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[48]:
```
{'a': '1', 'c': '1', 'b': '1', 'd': '1'}
```

In [49]:
```
keys={'a','b','c','d'}
value=1
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[49]:
```
{'a': 1, 'c': 1, 'b': 1, 'd': 1}
```

In [52]:
```
keys='a','b','c','d'
value=2,3
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[52]:
```
{'a': (2, 3), 'b': (2, 3), 'c': (2, 3), 'd': (2, 3)}
```

In [53]:
```
keys={'a','b','c','d'}
value=[10,20,30]
mydict3=dict.fromkeys()
mydict3
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[53], line 3
      1 keys={'a','b','c','d'}
      2 value=[10,20,30]
----> 3 mydict3=dict.fromkeys()
      4 mydict3

TypeError: fromkeys expected at least 1 argument, got 0
```

In [54]:
```
keys={'a','b','c','d'}
value=[10,20,30]
mydict3=dict.fromkeys(keys,value)
mydict3
```

Out[54]:
```
{'a': [10, 20, 30], 'c': [10, 20, 30], 'b': [10, 20, 30], 'd': [10, 20, 30]}
```

In [55]:
```
value.append(40)
mydict3
```

Out[55]:
```
{'a': [10, 20, 30, 40],
 'c': [10, 20, 30, 40],
 'b': [10, 20, 30, 40],
 'd': [10, 20, 30, 40]}
```

In [56]:
```
key.append('e')
mydict3
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[56], line 1
----> 1 key.append('e')
      2 mydict3

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

In [57]:
```
mydict3
```

Out[57]:
```
{'a': [10, 20, 30, 40],
 'c': [10, 20, 30, 40],
 'b': [10, 20, 30, 40],
 'd': [10, 20, 30, 40]}
```

In [58]:
```
mydict3[1:4]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[58], line 1
----> 1 mydict3[1:4]

KeyError: slice(1, 4, None)
```

In [59]:
```
mydict3.items()
```

Out[59]:
```
dict_items([('a', [10, 20, 30, 40]), ('c', [10, 20, 30, 40]), ('b', [10, 20, 3
0, 40]), ('d', [10, 20, 30, 40])])
```

In [60]:
```
len(mydict3)
```

Out[60]: 4

In [61]:
```
mydict={1:'one',2:'two',3:'three',4:'four'}
mydict
```

Out[61]: {1: 'one', 2: 'two', 3: 'three', 4: 'four'}

In [62]:
```
mydict[1]
```

Out[62]: 'one'

In [63]:
```
mydict.get(1)
mydict
```

Out[63]: {1: 'one', 2: 'two', 3: 'three', 4: 'four'}

In [64]:
```
mydict[1]
```

Out[64]: 'one'

In [65]:
```
mydict1={'Name':'Asif','ID':74123,'DOB':1991,'job':'Analyst'}
mydict1
```

Out[65]: {'Name': 'Asif', 'ID': 74123, 'DOB': 1991, 'job': 'Analyst'}

In [66]:
```
mydict['Name']
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[66], line 1
----> 1 mydict['Name']

KeyError: 'Name'
```

In [67]:
```
mydict['Name']
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[67], line 1
----> 1 mydict['Name']

KeyError: 'Name'
```

In [68]:
```
mydict1['Name']
```

Out[68]: 'Asif'

In [69]:
```
mydict1.get('job')
```

Out[69]: 'Analyst'

In [70]:
```
mydict1={'Name':'Asif','ID':12345,'DOB':1991,'Address':'Hilsinki'}
mydict1
```

Out[70]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}

In [71]:
```
mydict1['DOB']=1992
mydict1['Address']='Delhi'
mydict1
```

Out[71]:
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1992, 'Address': 'Delhi'}
```

In [72]:
```
dict1={'DOB':1995}
mydict1.update(dict1)
mydict1
```

Out[72]:
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1995, 'Address': 'Delhi'}
```

In [73]:
```
mydict1.add({'Job':'Analyst'})
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[73], line 1
----> 1 mydict1.add({'Job':'Analyst'})

AttributeError: 'dict' object has no attribute 'add'
```

In [74]:
```
mydict1['Job']='Analyst'
mydict1
```

Out[74]:
```
{'Name': 'Asif',
 'ID': 12345,
 'DOB': 1995,
 'Address': 'Delhi',
 'Job': 'Analyst'}
```

In [75]:
```
mydict1.pop('Job')
mydict1
```

Out[75]:
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1995, 'Address': 'Delhi'}
```

In [76]:
```
mydict1.popitem()
```

Out[76]:
```
('Address', 'Delhi')
```

In [77]:
```
mydict1
```

Out[77]:
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1995}
```

In [78]:
```
mydict1.del('ID')
```

```
  Cell In[78], line 1
    mydict1.del('ID')
            ^
SyntaxError: invalid syntax
```

In [79]:
```
del[mydict1['ID']]
mydict1
```

Out[79]:
```
{'Name': 'Asif', 'DOB': 1995}
```

In [80]:
```
mydict1.clear()
mydict1
```

Out[80]: {}

In [81]:
```
del mydict1
mydict1
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[81], line 2
      1 del mydict1
----> 2 mydict1

NameError: name 'mydict1' is not defined
```

In [82]:
```
mydict={'Name':'Asif','ID':12345,'DOB':1991,'Address':'Hilsinki'}
mydict
```

Out[82]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}

In [83]:
```
mydict1=mydict
mydict
```

Out[83]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}

In [84]:
```
id(mydict),id(mydict1)
```

Out[84]: (1966321053376, 1966321053376)

In [85]:
```
mydict2=mydict.copy()
mydict2
```

Out[85]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}

In [86]:
```
id(mydict2)
```

Out[86]: 1966262107904

In [87]:
```
mydict['Address']='Mumbai'
mydict
```

Out[87]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Mumbai'}

In [88]:
```
dict1={'Address':'Delhi'}
mydict.update(dict1)
mydict
```

Out[88]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Delhi'}

In [89]:
```
mydict1
```

Out[89]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Delhi'}

In [90]:
```
mydict2
```

Out[90]: {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}

Loop through a Dictionary

In [91]:
```
mydict1={'Name':'Asif','ID':12345,'DOB':1991,'Address':'Hilsinki','Job':'Analyst
mydict1
```

Out[91]:
```
{'Name': 'Asif',
 'ID': 12345,
 'DOB': 1991,
 'Address': 'Hilsinki',
 'Job': 'Analyst'}
```

In [92]:
```
for i in mydict1:
    print(i)
```

```
Name
ID
DOB
Address
Job
```

In [93]:
```
for i in mydict1:
    print(i,':',mydict1[i])
```

```
Name : Asif
ID : 12345
DOB : 1991
Address : Hilsinki
Job : Analyst
```

In [94]:
```
for i in mydict1:
    print(dict[i])
```

```
dict['Name']
dict['ID']
dict['DOB']
dict['Address']
dict['Job']
```

In [95]:
```
for i in mydict1:
    print(mydict1[i])
```

```
Asif
12345
1991
Hilsinki
Analyst
```

In [96]:
```
if 'Name' in mydict1:
    print("present")
else:
    print("not present")
```

```
present
```

Dictionary Membership

In [97]:
```
mydict1={'Name':'Asif','ID':12345,'DOB':1991,'Job':'Analyst'}
mydict1
```

Out[97]:
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Job': 'Analyst'}
```

In [98]:
```
'Name' in mydict1
```

Out[98]:
```
True
```

In [99]:
```
'Asif' in mydict1
```

Out[99]:
```
False
```

In [100…
```
'ID' in mydict1
```

Out[100…
```
True
```

In [101…
```
'Address' in mydict1
```

Out[101…
```
False
```

All / Any

In [102…
```
mydict1s={'Name':'Asif','ID':12345,'DOB':1991,'Job':'Analyst'}
mydict1
```

Out[102…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Job': 'Analyst'}
```

In [103…
```
all(mydict1)
```

Out[103…
```
True
```

In [104…
```
any(mydict1)
```

Out[104…
```
True
```

In [ ]:
```

```