DICTIONARY

In [ ]:
```
```

In [2]:
```
d = dict() # empty dictionary
```

In [3]:
```
d
```

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

In [4]:
```
d = {}
```

In [5]:
```
d
```

Out[5]:
```
{}
```

In [ ]:
```
```

In [6]:
```
d = {1 : 'one', 2 : 'two', 3:'three' }  #dict bwth integer keys
[]
```

Out[6]:
```
[]
```

In [7]:
```
d
```

Out[7]:
```
{1: 'one', 2: 'two', 3: 'three'}
```

In [8]:
```
d1 = {'A':'one','B':'two','C':'three'}  #dict with character key
```

In [9]:
```
d1
```

Out[9]:
```
{'A': 'one', 'B': 'two', 'C': 'three'}
```

In [12]:
```
d1 = {1:"one", 'A':'two',2:'three'} #dict with mixed keys
```

In [13]:
```
d1
```

Out[13]:
```
{1: 'one', 'A': 'two', 2: 'three'}
```

In [14]:
```
d1.keys()   # return dict keys using KEYS() method
```

Out[14]:
```
dict_keys([1, 'A', 2])
```

In [15]:
```
d1.values()  #rtrn dict val's using value( )method
```

Out[15]:
```
dict_values(['one', 'two', 'three'])
```

In [65]:
```
d1.items()  # wn we use items() method , O/P (it will return tuple format)
```

Out[65]:
```
dict_items([(1, 'one'), ('A', 'two'), (2, 'three')])
```

In [20]:
```
d = {1:'one' , 2:'two' , 'A': ['savitri' , 'devansh',['shankar']]}
```

In [22]:
```
d
```

Out[22]:
```
{1: 'one', 2: 'two', 'A': ['savitri', 'devansh', ['shankar']]}
```

In [23]:
```
d = {1:'one', 2:'two', 'A':['savitri', ('devansh',1),{9,'nine'}]}
```

In [24]:
```
d
```

Out[24]:
```
{1: 'one', 2: 'two', 'A': ['savitri', ('devansh', 1), {9, 'nine'}]}
```

In [25]:
```
for i in d:
    print(i)
```

```
1
2
A
```

In [26]:
```
for i in enumerate(d):
    print(i)
```

```
(0, 1)
(1, 2)
(2, 'A')
```

In [31]:
```
keys = {'a','b','c','d'}
d3 = dict.fromkeys(keys)   # create a dict from sequence of keys
d3
```

Out[31]:
```
{'b': None, 'c': None, 'a': None, 'd': None}
```

In [34]:
```
keys = {'a','b','c','d'}
value = 10
d4 = dict.fromkeys(keys , value)  # create a dict from sequence of keys assign
d4
```

Out[34]:
```
{'b': 10, 'c': 10, 'a': 10, 'd': 10}
```

In [35]:
```
keys = {'a','b','c','d'}
value = [10,20,30]
d4 = dict.fromkeys(keys , value)  # create a dict from sequence of keys assign
d4
```

Out[35]:
```
{'b': [10, 20, 30], 'c': [10, 20, 30], 'a': [10, 20, 30], 'd': [10, 20, 30]}
```

In [36]:
```
value.append(40)
d4
```

Out[36]:
```
{'b': [10, 20, 30, 40],
 'c': [10, 20, 30, 40],
 'a': [10, 20, 30, 40],
 'd': [10, 20, 30, 40]}
```

accessing items

In [40]:
```
all(d4)
```

Out[40]: True

In [41]:
```
any(d4)
```

Out[41]: True

In [82]:
```
value.append(0)
d4
```

Out[82]:
```
{'b': [10, 20, 30, 40, 0, 1, 1, 1, 0],
 'c': [10, 20, 30, 40, 0, 1, 1, 1, 0],
 'a': [10, 20, 30, 40, 0, 1, 1, 1, 0],
 'd': [10, 20, 30, 40, 0, 1, 1, 1, 0],
 '': [10, 20, 30, 46, 1]}
```

In [80]:
```
all(d4)
```

Out[80]: False

In [44]:
```
any(d4)
```

Out[44]: True

In [74]:
```
d4
```

Out[74]:
```
{'b': [10, 20, 30, 40, 0, 1],
 'c': [10, 20, 30, 40, 0, 1],
 'a': [10, 20, 30, 40, 0, 1],
 'd': [10, 20, 30, 40, 0, 1],
 '': [10, 20, 30, 46, 1]}
```

In [76]:
```
d4[""]=[10,20,30,46,1]
```

d4

In [77]:
```
all(d4)
```

Out[77]: False

In [78]:
```
any(d4)
```

Out[78]: True

In [60]:
```
d4.values()
```

Out[60]:
```
dict_values([[10, 20, 30, 40, 0], [10, 20, 30, 40, 0], [10, 20, 30, 40, 0],
[10, 20, 30, 40, 0], [10, 20, 30, 40, 0]])
```

In [64]:
```
for i in d4.values():
    # print(all(i))
    print()
    print(any(i))
```

```
True

True

True

True

True
```

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

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

In [2]:
```
d[1] #ACCESING ITEMS BY USING KEY
```

Out[2]:
```
'one'
```

In [13]:
```
d.get(1)  #accesing item by using GET() method
```

Out[13]:
```
'one'
```

In [14]:
```
d1 = {'name':'savitri','ID':74134,'DOB':1995,'job':'analyst'}
d1
```

Out[14]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [15]:
```
d1['name']   #access item using KEY
```

Out[15]:
```
'savitri'
```

ADD ,REMOVE & CHANGE ITEMS

In [16]:
```
d1
```

Out[16]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [21]:
```
d1['DOB'] = 1985 # changing DICT items
d1
```

Out[21]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1985, 'job': 'analyst'}
```

In [23]:
```
d = {'DOB':1993}
d1.update(d)
d1
```

Out[23]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1993, 'job': 'analyst'}
```

In [25]:
```
d1['ADD'] = 'AP'  # adding items in DICT
d1
```

Out[25]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1993, 'job': 'analyst', 'ADD': 'AP'}
```

In [26]:
```
for i in d1:
    print(i)
```

```
name
ID
DOB
job
ADD
```

In [27]:
```
d1.items()
```

Out[27]:
```
dict_items([('name', 'savitri'), ('ID', 74134), ('DOB', 1993), ('job', 'analy
st'), ('ADD', 'AP')])
```

In [30]:
```
for key,value in d1.items():
    print(key,':',value)
```

```
name : savitri
ID : 74134
DOB : 1993
job : analyst
ADD : AP
```

In [32]:
```
for value in d1.items():
    print(value)
```

```
('name', 'savitri')
('ID', 74134)
('DOB', 1993)
('job', 'analyst')
('ADD', 'AP')
```

In [33]:
```
for key in d1:
    print(key)
```

```
name
ID
DOB
job
ADD
```

In [34]:
```
for value in d1:
    print(value)
```

```
name
ID
DOB
job
ADD
```

In [43]:
```
d1
```

Out[43]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1993, 'ADD': 'AP'}
```

In [44]:
```
d1.pop('job')  # remove items in the DICT using POP() methiod
d1
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[44], line 1
----> 1 d1.pop('job')  # remove items in the DICT using POP() methiod
      2 d1

KeyError: 'job'
```

In [49]:
```
if 'job' in d1:
    d1.pop('job')
```

In [51]:
```
d1.pop('job', None)
d1
```

Out[51]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1993, 'ADD': 'AP'}
```

In [54]:
```
if 'DOB' in d1:
    print('DOB')
```

```
DOB
```

In [58]:
```
if 'job' in d1:
    print('job')
```

In [56]:
```
if 'ADD' in d1:
    print('ADD')
```

```
ADD
```

In [59]:
```
d1
```

Out[59]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1993, 'ADD': 'AP'}
```

In [61]:
```
d1.popitem() #random item is removed
```

Out[61]:
```
('ADD', 'AP')
```

In [62]:
```
d1
```

Out[62]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1993}
```

In [63]:
```
d1.pop('DOB')
```

Out[63]:
```
1993
```

In [65]:
```
d1
```

Out[65]:
```
{'name': 'savitri', 'ID': 74134}
```

In [70]:
```
if 'ID' in d1:
    print(d1)
```

In [71]:
```
d1
```

Out[71]:
```
{'name': 'savitri'}
```

In [72]:
```
if 'name' in d1:
    print(d1)
```

```
{'name': 'savitri'}
```

In [73]:
```
d1 = {'name':'savitri','ID':74134,'DOB':1995,'job':'analyst'}
d1
```

Out[73]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [75]:
```
del[d1['ID']]
del
```

```
  Cell In[75], line 2
    del
       ^
SyntaxError: invalid syntax
```

In [77]:
```
if 'ID' in d1:
    print('ID')
```

In [78]:
```
d1
```

Out[78]:
```
{'name': 'savitri', 'DOB': 1995, 'job': 'analyst'}
```

In [79]:
```
if  'DOB' in d1:
    print(d1)
```

```
{'name': 'savitri', 'DOB': 1995, 'job': 'analyst'}
```

In [80]:
```
del d1['DOB']
```

In [81]:
```
d1
```

Out[81]:
```
{'name': 'savitri', 'job': 'analyst'}
```

In [83]:
```
del (d1['job'])
```

In [84]:
```
d1
```

Out[84]:
```
{'name': 'savitri'}
```

In [85]:
```
d1 = {'name':'savitri','ID':74134,'DOB':1995,'job':'analyst'}
d1
```

Out[85]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [88]:
```
d1.clear()   #delete all items in DICT using CLEAR() method
d1
```

Out[88]:
```
{}
```

In [91]:
```
del d1  #delete dictionary object(name error)
d1
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[91], line 1
----> 1 del d1  #delete dictionary object(name error)
      2 d1

NameError: name 'd1' is not defined
```

Copy Dictionary

In [92]:
```
d1 = {'name':'savitri','ID':74134,'DOB':1995,'job':'analyst'}
d1
```

Out[92]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [93]:
```
d2 = d1  #create a new reference "d2"
```

In [94]:
```
id(d1) , id(d2)  # the address of d1 & d2 same
```

Out[94]:
```
(2589832713984, 2589832713984)
```

In [96]:
```
d3 = d1.copy()  #create a copy of the dictionary
d3
```

Out[96]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [97]:
```
id(d3)  # the adress of d3 will be diff from d1 bcz
```

Out[97]:
```
2589832806720
```

In [98]:
```
d2
```

Out[98]:
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [102…
```
d1['address'] = 'mumbai'
d1
```

Out[102…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [103…
```
d2['address'] = 'mumbai'
d2
```

Out[103…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [104…
```
d1
```

Out[104…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [105…
```
d2
```

Out[105…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [106…
```
d3  # copy() of list won't be impacted due to the changes made in the original
```

Out[106…
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [107…
```
d1
```

Out[107…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [110…
```
d2  # copy() of list won't be impacted due to the changes made in the original
```

Out[110…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [111…
```
d3  # copy() of list won't be impacted due to the changes made in the original
```

Out[111…
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

LOOP THROUGH A DICTIONARY

In [113…
```
d1
```

Out[113…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [114…
```
d
```

Out[114…
```
{'DOB': 1993}
```

In [115…
```
d1
```

Out[115…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [117…
```
for i in d1:
    print(i)
```

```
name
ID
DOB
job
address
```

In [118…
```
for i in d1:
    print(i , ':',d1[i])    # key & value pair
```

```
name : savitri
ID : 74134
DOB : 1995
job : analyst
address : mumbai
```

In [119…
```
for i in d1:
    print(d1[i])
```

```
savitri
74134
1995
analyst
mumbai
```

In [120…
```
for i in d1:
    print(i)  #for keys
```

```
name
ID
DOB
job
address
```

In [124…
```
for i in d1:
    print(d1[i])  #for values
```

```
savitri
74134
1995
analyst
mumbai
```

In [126…
```
for i in d1:
    print(i ,':', d1[i])  #for keys & value pair
```

```
name : savitri
ID : 74134
DOB : 1995
job : analyst
address : mumbai
```

In [128…
```
for i in d1:
    print(d1[i])  #dictionary items
```

```
savitri
74134
1995
analyst
mumbai
```

DICTIONARY MEMBERSHIP

In [129…
```
d1
```

Out[129…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [131…
```
d2
```

Out[131…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [132…
```
d3
```

Out[132…
```
{'name': 'savitri', 'ID': 74134, 'DOB': 1995, 'job': 'analyst'}
```

In [133…
```
'name' in d3    # Test if a key is in a DICT or not
```

Out[133…
```
True
```

In [134…
```
'savitri' in d3    #Membership test can be only done FOR KEYS
```

Out[134…
```
False
```

In [135…
```
'ID' in d3
```

Out[135…
```
True
```

In [136…
```
74134 in d3
```

Out[136…
```
False
```

ALL / ANY

In [137…
```
d2
```

Out[137…
```
{'name': 'savitri',
 'ID': 74134,
 'DOB': 1995,
 'job': 'analyst',
 'address': 'mumbai'}
```

In [138…
```
all(d1)
```

Out[138…
```
True
```

In [139…
```
any(d1)
```

Out[139… True

In [141…
```
d5 = {0:'savi1'}
d5
```

Out[141… {0: 'savi1'}

In [142…
```
all(d5)
```

Out[142… False

In [143…
```
any(d5)
```

Out[143… False

In [147…
```
d6 = {'savi1':0}
d6
```

Out[147… {'savi1': 0}

In [148…
```
all(d6)
```

Out[148… True

In [149…
```
any(d6)
```

Out[149… True

In [ ]: