SET

In [2]:
```
m = {1,2,3,4,5}
m
```

Out[2]:
```
{1, 2, 3, 4, 5}
```

In [3]:
```
len(m)
```

Out[3]:
```
5
```

In [4]:
```
m={1,1,2,2,3,4,5,5}
m
```

Out[4]:
```
{1, 2, 3, 4, 5}
```

In [5]:
```
m1={1.79,2.08,3.99,4.56,5.45}
m1
```

Out[5]:
```
{1.79, 2.08, 3.99, 4.56, 5.45}
```

In [6]:
```
m2 = {'Asif' , 'John' , 'Tyrion'}
m2
```

Out[6]:
```
{'Asif', 'John', 'Tyrion'}
```

In [7]:
```
m3 = {10,20, "Hola", (11, 22, 32)}
m3
```

Out[7]:
```
{(11, 22, 32), 10, 20, 'Hola'}
```

In [8]:
```
s3 = {10,20, "Hola", [11, 22, 32]}
s3
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[8], line 1
----> 1 s3 = {10,20, "Hola", [11, 22, 32]}
      2 s3

TypeError: unhashable type: 'list'
```

In [9]:
```
m4 = set()
print(type(m4))
```

```
<class 'set'>
```

In [10]:
```
m1=set(('one' , 'two' , 'three' , 'four'))
m1
```

Out[10]:
```
{'four', 'one', 'three', 'two'}
```

In [22]:
```
m = {'one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight'}

for i in m:
    print(i)
```

```
two
six
five
one
seven
three
four
eight
```

In [23]:
```
for i in enumerate(m):
    print(i)
```

```
(0, 'two')
(1, 'six')
(2, 'five')
(3, 'one')
(4, 'seven')
(5, 'three')
(6, 'four')
(7, 'eight')
```

In [24]:
```
m
```

Out[24]:
```
{'eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two'}
```

In [25]:
```
'one' in m
```

Out[25]:
```
True
```

In [26]:
```
'ten' in m
```

Out[26]:
```
False
```

In [27]:
```
if 'three' in m:
    print('Three is present')
else:
    print('Not present')
```

```
Three is present
```

In [28]:
```
if 'eleven' in m:
    print('Three is present')
else:
    print('Not present')
```

```
Not present
```

In [29]:
```
m
```

Out[29]:
```
{'eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two'}
```

In [34]:
```
m.add('Nine')
m
```

Out[34]:
```
{'ELEVEN',
 'Nine',
 'TEN',
 'TWELVE',
 'eight',
 'five',
 'four',
 'one',
 'seven',
 'six',
 'three',
 'two'}
```

In [35]:
```
m.update(['TEN' , 'ELEVEN' , 'TWELVE'])
m
```

Out[35]:
```
{'ELEVEN',
 'Nine',
 'TEN',
 'TWELVE',
 'eight',
 'five',
 'four',
 'one',
 'seven',
 'six',
 'three',
 'two'}
```

In [36]:
```
m.remove('Nine')
m
```

Out[36]:
```
{'ELEVEN',
 'TEN',
 'TWELVE',
 'eight',
 'five',
 'four',
 'one',
 'seven',
 'six',
 'three',
 'two'}
```

In [37]:
```
m.update(['TEN' , 'ELEVEN' , 'TWELVE'])
m
```

Out[37]:
```
{'ELEVEN',
 'TEN',
 'TWELVE',
 'eight',
 'five',
 'four',
 'one',
 'seven',
 'six',
 'three',
 'two'}
```

In [39]:
```
m.clear()
m
```

Out[39]:
```
set()
```

In [40]:
```
del m
m
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[40], line 2
      1 del m
----> 2 m

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

In [41]:
```
m={'one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight'}
m
```

Out[41]:
```
{'eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two'}
```

In [42]:
```
m1=m
m1
```

Out[42]:
```
{'eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two'}
```

In [43]:
```
id(m), id(m1)
```

Out[43]:
```
(2834278954624, 2834278954624)
```

In [44]:
```
m=m.copy()
m
```

Out[44]:
```
{'eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two'}
```

In [45]:
```
id(m)
```

Out[45]:
```
2834278956640
```

In [46]:
```
m.add('nine')
m
```

Out[46]:
```
{'eight', 'five', 'four', 'nine', 'one', 'seven', 'six', 'three', 'two'}
```

In [47]:
```
m1
```

Out[47]:
```
{'eight', 'five', 'four', 'one', 'seven', 'six', 'three', 'two'}
```

In [48]:
```
m
```

Out[48]:
```
{'eight', 'five', 'four', 'nine', 'one', 'seven', 'six', 'three', 'two'}
```

In [49]:
```
A = {1,2,3,4,5}
B = {4,5,6,7,8}
C = {8,9,10}
```

```
A|B
```

Out[49]: {1, 2, 3, 4, 5, 6, 7, 8}

In [50]:
```
A.union(B)
```

Out[50]: {1, 2, 3, 4, 5, 6, 7, 8}

In [51]:
```
A.union(B,C)
```

Out[51]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [52]:
```
A.update(B,C)
A
```

Out[52]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [53]:
```
A = {1,2,3,4,5}
B = {4,5,6,7,8}
A & B
```

Out[53]: {4, 5}

In [54]:
```
A.intersection(B)
```

Out[54]: {4, 5}

In [55]:
```
A.intersection_update(B)
A
```

Out[55]: {4, 5}

In [56]:
```
A = {1,2,3,4,5}
B = {4,5,6,7,8}
A - B
```

Out[56]: {1, 2, 3}

In [57]:
```
A.difference(B)
```

Out[57]: {1, 2, 3}

In [58]:
```
B-A
```

Out[58]: {6, 7, 8}

In [59]:
```
B.difference(A)
```

Out[59]: {6, 7, 8}

In [60]:
```
B.difference_update(A)
```

In [61]:
```
B
```

Out[61]: {6, 7, 8}

In [63]:
```
A = {1,2,3,4,5}
B = {4,5,6,7,8}
A^B
```

Out[63]:
```
{1, 2, 3, 6, 7, 8}
```

In [64]:
```
A.symmetric_difference(B)
```

Out[64]:
```
{1, 2, 3, 6, 7, 8}
```

In [65]:
```
A.symmetric_difference_update(B)
A
```

Out[65]:
```
{1, 2, 3, 6, 7, 8}
```

In [66]:
```
A = {1,2,3,4,5,6,7,8,9}
B = {3,4,5,6,7,8}
C = {10,20,30,40}
```

In [67]:
```
B.issubset(A)
```

Out[67]:
```
True
```

In [68]:
```
A.issuperset(B)
```

Out[68]:
```
True
```

In [69]:
```
C.isdisjoint(A)
```

Out[69]:
```
True
```

In [70]:
```
B.isdisjoint(A)
```

Out[70]:
```
False
```

In [71]:
```
A
```

Out[71]:
```
{1, 2, 3, 4, 5, 6, 7, 8, 9}
```

In [72]:
```
sum(A)
```

Out[72]:
```
45
```

In [73]:
```
max(A)
```

Out[73]:
```
9
```

In [74]:
```
min(A)
```

Out[74]:
```
1
```

In [75]:
```
len(A)
```

Out[75]:
```
9
```

In [76]:
```
list(enumerate(A))
```

Out[76]:
```
[(0, 1), (1, 2), (2, 3), (3, 4), (4, 5), (5, 6), (6, 7), (7, 8), (8, 9)]
```

In [77]:
```
D=sorted(A,reverse=True)
D
```

Out[77]:
```
[9, 8, 7, 6, 5, 4, 3, 2, 1]
```

In [78]:
```
sorted(D)
```

Out[78]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
```

Dictionary

In [79]:
```
m=dict()
m
```

Out[79]:
```
{}
```

In [80]:
```
m={}
m
```

Out[80]:
```
{}
```

In [81]:
```
m={1:'one',2:'two',3:'three'}
m
```

Out[81]:
```
{1: 'one', 2: 'two', 3: 'three'}
```

In [82]:
```
m=dict({1:'one',2:'two',3:'three'})
m
```

Out[82]:
```
{1: 'one', 2: 'two', 3: 'three'}
```

In [83]:
```
m = {'A':'one' , 'B':'two' , 'C':'three'}
m
```

Out[83]:
```
{'A': 'one', 'B': 'two', 'C': 'three'}
```

In [84]:
```
m.keys()
```

Out[84]:
```
dict_keys(['A', 'B', 'C'])
```

In [85]:
```
m.values()
```

Out[85]:
```
dict_values(['one', 'two', 'three'])
```

In [86]:
```
m.items()
```

Out[86]:
```
dict_items([('A', 'one'), ('B', 'two'), ('C', 'three')])
```

In [87]:
```
m={1:'one' , 2:'two' , 'A':['asif' , 'john' , 'Maria']} # dictionary with
m
```

Out[87]:
```
{1: 'one', 2: 'two', 'A': ['asif', 'john', 'Maria']}
```

In [90]:
```
m ={1:'one' , 2:'two' , 'A':['asif' , 'john' , 'Maria'],  'B':('Bat' , 'cat','ha
m
```

Out[90]:
```
{1: 'one',
 2: 'two',
 'A': ['asif', 'john', 'Maria'],
 'B': ('Bat', 'cat', 'hat')}
```

In [ ]:
```
k = {'a' , 'b' , 'c' , 'd'}
m3 = dict.fromkeys(k)
m3
```

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

In [92]:
```
k = {'a' , 'b' , 'c' , 'd'}
v = 10
m3 = dict.fromkeys(k , v)
m3
```

Out[92]:
```
{'b': 10, 'd': 10, 'c': 10, 'a': 10}
```

In [93]:
```
k = {'a' , 'b' , 'c' , 'd'}
v = [10,20,30]
m3 = dict.fromkeys(k , v)
m3
```

Out[93]:
```
{'b': [10, 20, 30], 'd': [10, 20, 30], 'c': [10, 20, 30], 'a': [10, 20, 30]}
```

In [94]:
```
v.append(40)
m3
```

Out[94]:
```
{'b': [10, 20, 30, 40],
 'd': [10, 20, 30, 40],
 'c': [10, 20, 30, 40],
 'a': [10, 20, 30, 40]}
```

In [95]:
```
m={1:'one' , 2:'two' , 3:'three' , 4:'four'}
m
```

Out[95]:
```
{1: 'one', 2: 'two', 3: 'three', 4: 'four'}
```

In [96]:
```
m[1]
```

Out[96]:
```
'one'
```

In [97]:
```
m.get(1)
```

Out[97]:
```
'one'
```

In [98]:
```
m1={'Name':'Asif' , 'ID': 74123 , 'DOB': 1991 , 'job' :'Analyst'}
m1
```

Out[98]:
```
{'Name': 'Asif', 'ID': 74123, 'DOB': 1991, 'job': 'Analyst'}
```

In [99]:
```
m1['Name']
```

Out[99]: 'Asif'

In [101…
```
m1.get('job')
```

Out[101… 'Analyst'

In [102…
```
m = {'Name':'Asif' , 'ID': 12345 , 'DOB': 1991 , 'Address' : 'Hilsinki'}
m
```

Out[102… {'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}

In [103…
```
m['DOB']=1992
m['Address']='Delhi'
m
```

Out[103… {'Name': 'Asif', 'ID': 12345, 'DOB': 1992, 'Address': 'Delhi'}

In [104…
```
dict1 = {'DOB':1995}
m.update(dict1)
m
```

Out[104… {'Name': 'Asif', 'ID': 12345, 'DOB': 1995, 'Address': 'Delhi'}

In [105…
```
m['Job'] = 'Analyst'
m
```

Out[105…
```
{'Name': 'Asif',
 'ID': 12345,
 'DOB': 1995,
 'Address': 'Delhi',
 'Job': 'Analyst'}
```

In [106…
```
m.pop('Job')
m
```

Out[106… {'Name': 'Asif', 'ID': 12345, 'DOB': 1995, 'Address': 'Delhi'}

In [107…
```
m.popitem()
m
```

Out[107… {'Name': 'Asif', 'ID': 12345, 'DOB': 1995}

In [108…
```
del[m['ID']]
m
```

Out[108… {'Name': 'Asif', 'DOB': 1995}

In [109…
```
m.clear()
m
```

Out[109… {}

In [110…
```
del m
m
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[110], line 2
      1 del m
----> 2 m

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

In [111…
```
m = {'Name':'Asif' , 'ID': 12345 , 'DOB': 1991 , 'Address' : 'Hilsinki'}
m
```

Out[111…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}
```

In [112…
```
mydict1 = m
```

In [113…
```
id(m) , id(mydict1)
```

Out[113…
```
(2834284169920, 2834284169920)
```

In [114…
```
mydict2 = m.copy()
id(mydict2)
```

Out[114…
```
2834284690560
```

In [115…
```
m['Address'] = 'Mumbai'
m
```

Out[115…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Mumbai'}
```

In [116…
```
mydict1
```

Out[116…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Mumbai'}
```

In [117…
```
mydict2
```

Out[117…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Address': 'Hilsinki'}
```

In [118…
```
mydict1 = {'Name':'Asif' , 'ID': 12345 , 'DOB': 1991 , 'Address' : 'Hilsinki' ,
mydict1
```

Out[118…
```
{'Name': 'Asif',
 'ID': 12345,
 'DOB': 1991,
 'Address': 'Hilsinki',
 'Job': 'Analyst'}
```

In [120…
```
for i in mydict1:
    print(i , ':' , mydict1[i])
```

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

In [121…
```
for i in mydict1:
    print(mydict1[i])
```

```
Asif
12345
1991
Hilsinki
Analyst
```

In [122…
```
mydict1 = {'Name':'Asif' , 'ID': 12345 , 'DOB': 1991 , 'Job': 'Analyst'}
mydict1
```

Out[122…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Job': 'Analyst'}
```

In [123…
```
'Name' in mydict1
```

Out[123…
```
True
```

In [124…
```
'Asif' in mydict1
```

Out[124…
```
False
```

In [125…
```
'ID' in mydict1
```

Out[125…
```
True
```

In [126…
```
'Address' in mydict1
```

Out[126…
```
False
```

In [127…
```
mydict1 = {'Name':'Asif' , 'ID': 12345 , 'DOB': 1991 , 'Job': 'Analyst'}
mydict1
```

Out[127…
```
{'Name': 'Asif', 'ID': 12345, 'DOB': 1991, 'Job': 'Analyst'}
```

In [128…
```
all(mydict1)
```

Out[128…
```
True
```

In [ ]:
```
```