SET CREATION

In [5]:
```
s={}
s
```

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

In [6]:
```
type(s)
```

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

In [8]:
```
s1={4,6,3,2,7}
s1
```

Out[8]:
```
{2, 3, 4, 6, 7}
```

In [9]:
```
type (s1)
```

Out[9]:
```
set
```

In [10]:
```
s2=(3,4.5,'hi',1+2j,'True')
```

In [11]:
```
s2
```

Out[11]:
```
(3, 4.5, 'hi', (1+2j), 'True')
```

In [26]:
```
s3={ 'hi','hello','siri','nani'}
```

In [13]:
```
s3
```

Out[13]:
```
{'hello', 'hi', 'nani', 'siri'}
```

In [14]:
```
s3 [1]='bye'
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[14], line 1
----> 1 s3 [1]='bye'

TypeError: 'set' object does not support item assignment
```

In [17]:
```
s3={'hello','hi','nani','siri',['good']}
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[17], line 1
----> 1 s3={'hello','hi','nani','siri',['good']}

TypeError: unhashable type: 'list'
```

In [18]:
```
print(type(s3))
```

```
<class 'list'>
```

In [19]:
```
s1
```

Out[19]: {2, 3, 4, 6, 7}

In [20]:
```
s2
```

Out[20]: (3, 4.5, 'hi', (1+2j), 'True')

In [29]:
```
s4={2,4,1,5,7,9,2,3,6}
```

In [22]:
```
s4
```

Out[22]: {1, 2, 3, 4, 5, 6, 7, 9}

LOOP THROUGH A SET

In [23]:
```
for i in s4:
    print(i)
```

```
1
2
3
4
5
6
7
9
```

In [24]:
```
for i in enumerate(s4):
    print(i)
```

```
(0, 1)
(1, 2)
(2, 3)
(3, 4)
(4, 5)
(5, 6)
(6, 7)
(7, 9)
```

In [27]:
```
for i in enumerate (s3):
    print(i)
```

```
(0, 'hello')
(1, 'hi')
(2, 'siri')
(3, 'nani')
```

SET MEMBERSHIP

In [30]:
```
s4
```

Out[30]: {1, 2, 3, 4, 5, 6, 7, 9}

In [31]:
```
0 in s4
```

Out[31]: False

In [32]:
```
5 in s4
```

Out[32]: True

In [33]:
```
'hi' in s3
```

Out[33]: True

In [34]:
```
'swapna' in s3
```

Out[34]: False

In [35]:
```
9 in s4
```

Out[35]: True

In [36]:
```
if 2 in  s4:
    print('2 is present in the s4')
else:
    print('2 is not present in the s4')
```

```
2 is present in the s4
```

In [37]:
```
if 0 in  s4:
    print('0 is present in the s4')
else:
    print('0 is not present in the s4')
```

```
0 is not present in the s4
```

Add and Remove Items

In [38]:
```
s4
```

Out[38]: {1, 2, 3, 4, 5, 6, 7, 9}

In [40]:
```
s4.add(10)
```

In [41]:
```
s4
```

Out[41]: {1, 2, 3, 4, 5, 6, 7, 9, 10}

In [42]:
```
s3.add('swapna')
```

In [43]:
```
s3
```

Out[43]: {'hello', 'hi', 'nani', 'siri', 'swapna'}

In [45]:
```
s4.update([25,45,12])
```

In [46]:
```
s4
```

Out[46]: {1, 2, 3, 4, 5, 6, 7, 9, 10, 12, 25, 45}

In [47]:
```
s3.update(['sridhar','sreecharan','mokshith'])
```

In [48]:
```
s3
```

Out[48]:
```
{'hello', 'hi', 'mokshith', 'nani', 'siri', 'sreecharan', 'sridhar', 'swapna'}
```

In [49]:
```
s4.remove(10)
```

In [50]:
```
s4
```

Out[50]:
```
{1, 2, 3, 4, 5, 6, 7, 9, 12, 25, 45}
```

In [51]:
```
s4.remove(100)
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[51], line 1
----> 1 s4.remove(100)

KeyError: 100
```

In [52]:
```
s4.discard(100)
```

In [53]:
```
s4.discard(25)
```

In [54]:
```
s4
```

Out[54]:
```
{1, 2, 3, 4, 5, 6, 7, 9, 12, 45}
```

In [55]:
```
id(s3)
```

Out[55]:
```
2764129678752
```

In [56]:
```
id(s4)
```

Out[56]:
```
2764129677856
```

COPY SET

In [57]:
```
s3
```

Out[57]:
```
{'hello', 'hi', 'mokshith', 'nani', 'siri', 'sreecharan', 'sridhar', 'swapna'}
```

In [58]:
```
s4
```

Out[58]:
```
{1, 2, 3, 4, 5, 6, 7, 9, 12, 45}
```

In [59]:
```
s2
```

Out[59]:
```
(3, 4.5, 'hi', (1+2j), 'True')
```

In [60]:
```
s1
```

Out[60]:
```
{2, 3, 4, 6, 7}
```

In [61]:
```
s
```

Out[61]:
```
{}
```

In [62]:
```
s=s3.copy()
```

In [66]:
```
s
```

Out[66]:
```
{'hello', 'hi', 'mokshith', 'nani', 'siri', 'sreecharan', 'sridhar', 'swapna'}
```

In [64]:
```
s==s3
```

Out[64]:
```
True
```

In [67]:
```
s2=s3.copy()
```

In [68]:
```
s2
```

Out[68]:
```
{'hello', 'hi', 'mokshith', 'nani', 'siri', 'sreecharan', 'sridhar', 'swapna'}
```

In [69]:
```
s4
```

Out[69]:
```
{1, 2, 3, 4, 5, 6, 7, 9, 12, 45}
```

In [70]:
```
s4.add(20)
```

In [77]:
```
s4
```

Out[77]:
```
{1, 2, 3, 4, 5, 6, 7, 9, 12, 20, 45}
```

SET OPERATIONS

In [78]:
```
a|b
```

Out[78]:
```
{1, 2, 3, 5, 7, 9}
```

In [75]:
```
b|c
```

Out[75]:
```
{1, 2, 3, 4, 6, 7, 8, 9}
```

In [76]:
```
a|c
```

Out[76]:
```
{1, 2, 3, 4, 5, 6, 7, 8, 9}
```

Intersection(&)

In [79]:
```
a&b
```

Out[79]:
```
{2, 3, 7, 9}
```

In [80]:
```
b&c
```

Out[80]:
```
{1, 2, 7}
```

In [81]:
```
a&c
```

Out[81]: {2, 7}

Difference(-)

In [94]:
```
a
```

Out[94]: {1, 5}

In [83]:
```
b
```

Out[83]: {1, 2, 3, 7, 9}

In [84]:
```
c
```

Out[84]: {1, 2, 4, 6, 7, 8}

In [85]:
```
a-b
```

Out[85]: {5}

In [86]:
```
a-c
```

Out[86]: {3, 5, 9}

In [87]:
```
b-c
```

Out[87]: {3, 9}

In [88]:
```
a-b-c
```

Out[88]: {5}

In [89]:
```
c-a
```

Out[89]: {1, 4, 6, 8}

In [90]:
```
a.symmetric_difference(b)
```

Out[90]: {1, 5}

In [91]:
```
b.symmetric_difference(c)
```

Out[91]: {3, 4, 6, 8, 9}

In [92]:
```
a.symmetric_difference_update(b)
```

In [93]:
```
a
```

Out[93]: {1, 5}

In [107…
```
d={3,5,7,9,10,13}
```

In [97]:
```
sum(d)
```

Out[97]: 47

In [98]:
```
max(d)
```

Out[98]: 13

In [99]:
```
min(d)
```

Out[99]: 3

In [100…
```
len(d)
```

Out[100… 6

In [101…
```
list(enumerate(d))
```

Out[101… [(0, 3), (1, 5), (2, 7), (3, 9), (4, 10), (5, 13)]

In [108…
```
sorted(d)
```

Out[108… [3, 5, 7, 9, 10, 13]

In [130…
```
e={1,2,3,4,5,6,7}
f={2,3,4,5}
g={2,3,4,7}
```

In [131…
```
e.issuperset(f)
```

Out[131… True

In [132…
```
f.issuperset(e)
```

Out[132… False

In [133…
```
f.issubset(e)
```

Out[133… True

In [134…
```
e.issuperset(g)
```

Out[134… True

In [136…
```
g.isdisjoint(f)
```

Out[136… False

DICTIONARY

In [137…
```
d={}
d
```

Out[137… {}

In [138…
```
type(d)
```
Out[138… dict

In [139…
```
d1={1:'one',2:'two',3:'three',4:'four'}
```
In [140…
```
d1
```
Out[140… {1: 'one', 2: 'two', 3: 'three', 4: 'four'}

In [141…
```
d2={'a':1,'b':2,'c':3}
```
In [142…
```
d2
```
Out[142… {'a': 1, 'b': 2, 'c': 3}

In [143…
```
d3={'sridhar':1,'swapna':2,'sreecharan':3,'mokshith':4}
```
In [144…
```
d3
```
Out[144… {'sridhar': 1, 'swapna': 2, 'sreecharan': 3, 'mokshith': 4}

In [145…
```
d3.keys()
```
Out[145… dict_keys(['sridhar', 'swapna', 'sreecharan', 'mokshith'])

In [146…
```
d3.values()
```
Out[146… dict_values([1, 2, 3, 4])

In [147…
```
d2.keys()
```
Out[147… dict_keys(['a', 'b', 'c'])

In [148…
```
d3.items()
```
Out[148… dict_items([('sridhar', 1), ('swapna', 2), ('sreecharan', 3), ('mokshith', 4)])

In [156…
```
d2={'a':1,'b':2,'c':3,'d':[45], 'e':[50]}
```
In [157…
```
d2
```
Out[157… {'a': 1, 'b': 2, 'c': 3, 'd': [45], 'e': [50]}

In [160…
```
keys={'a','b','c'}
d4=d.fromkeys(keys)
d4
```
Out[160… {'a': None, 'c': None, 'b': None}

In [161…
```
keys={'a','b','c'}
value=10
d4=d.fromkeys(keys,value)
d4
```

Out[161… {'a': 10, 'c': 10, 'b': 10}

In [163…
```
keys={'a','b','c'}
value=( 10,20,30,)
d4=d.fromkeys(keys,value)
d4
```

Out[163… {'a': (10, 20, 30), 'c': (10, 20, 30), 'b': (10, 20, 30)}

CHANGE DICT

In [167…
```
d5={'name':'swapna','age':30, 'height':5.5}
```

In [191…
```
d5
```

Out[191… {'age': 31}

In [169…
```
d5['age']=31
```

In [170…
```
d5
```

Out[170… {'name': 'swapna', 'age': 31, 'height': 5.5}

In [172…
```
d5['height']=5.6
```

In [195…
```
d5
```

Out[195… {'age': 31}

In [176…
```
d5.pop('name')
```

Out[176… 'swapna'

In [177…
```
d5
```

Out[177… {'age': 31, 'height': 5.6}

In [178…
```
d5.popitem()
```

Out[178… ('height', 5.6)

In [179…
```
d2
```

Out[179… {'a': 1, 'b': 2, 'c': 3, 'd': [45], 'e': [50]}

In [180…
```
d3
```

Out[180… {'sridhar': 1, 'swapna': 2, 'sreecharan': 3, 'mokshith': 4}

In [181…
```
d2.clear()
```

In [182…
```
d2
```

Out[182… {}

In [183…
```
del d2
```

In [184…
```
d2
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[184], line 1
----> 1 d2

NameError: name 'd2' is not defined
```

In [185…
```
d3
```

Out[185…
```
{'sridhar': 1, 'swapna': 2, 'sreecharan': 3, 'mokshith': 4}
```

In [186…
```
d2=d3.copy()
```

DICT THROUGH LOOP

In [187…
```
d2
```

Out[187…
```
{'sridhar': 1, 'swapna': 2, 'sreecharan': 3, 'mokshith': 4}
```

In [188…
```
for i in d2:
    print(i)
```

```
sridhar
swapna
sreecharan
mokshith
```

In [189…
```
for i in enumerate(d2):
    print(i)
```

```
(0, 'sridhar')
(1, 'swapna')
(2, 'sreecharan')
(3, 'mokshith')
```

In [190…
```
d5
```

Out[190…
```
{'age': 31}
```

membership(IT IS DONE FOR ONLY KEYS NOT FOR VALUES)

In [192…
```
d2
```

Out[192…
```
{'sridhar': 1, 'swapna': 2, 'sreecharan': 3, 'mokshith': 4}
```

In [193…
```
1 in d2
```

Out[193…
```
False
```

In [194…
```
'sridar' in d2
```

Out[194…
```
False
```

In [196…
```
d6={'name':'swapna','age':30,'city':'hyd'}
```

In [197…
```
d6
```

Out[197…
```
{'name': 'swapna', 'age': 30, 'city': 'hyd'}
```

In [200…
```
'name'in d6
```

Out[200…
```
True
```

In [201…
```
'swapna' in d6
```

Out[201…
```
False
```

In [202…
```
'age' in d6
```

Out[202…
```
True
```

In [203…
```
'city'in d6
```

Out[203…
```
True
```

In [204…
```
d6
```

Out[204…
```
{'name': 'swapna', 'age': 30, 'city': 'hyd'}
```

ALL &ANY

In [208…
```
all(d6)
```

Out[208…
```
True
```

In [209…
```
any(d6)
```

Out[209…
```
True
```

In [210…
```
all(d5)
```

Out[210…
```
True
```

In [211…
```
any(d5)
```

Out[211…
```
True
```

In [ ]:
```

```