# Set

In [2]:
```
s={ }
s
```

Out[2]: {}

In [4]:
```
type(s)
```

Out[4]: dict

In [6]:
```
s1=set()
type(s1)
```

Out[6]: set

In [8]:
```
s1
```

Out[8]: set()

In [10]:
```
s2={20,100,3,45}
s2
```

Out[10]: {3, 20, 45, 100}

In [12]:
```
s3={'z','l','c','e','f'}
s3
```

Out[12]: {'c', 'e', 'f', 'l', 'z'}

In [16]:
```
s4={1,2.3,'yash',1+2j,[1,2,3],(4,5,6),True}
s4
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[16], line 1
----> 1 s4={1,2.3,'yash',1+2j,[1,2,3],(4,5,6),True}
      2 s4

TypeError: unhashable type: 'list'
```

In [18]:
```
s5={2,3.4,'yash',1+2j,False}
s5
```

Out[18]: {(1+2j), 2, 3.4, False, 'yash'}

In [20]:
```
print(s1)
print(s2)
print(s3)
print(s5)
```

```
set()
{45, 3, 100, 20}
{'f', 'z', 'c', 'e', 'l'}
{False, 2, 3.4, 'yash', (1+2j)}
```

In [22]:
```
s2
```

Out[22]:
```
{3, 20, 45, 100}
```

In [24]:
```
s2.add(30)
s2
```

Out[24]:
```
{3, 20, 30, 45, 100}
```

In [26]:
```
s2.add(400)
s2
```

Out[26]:
```
{3, 20, 30, 45, 100, 400}
```

In [30]:
```
s2[1:5] #set indexing and slicing is not allowed.
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[30], line 1
----> 1 s2[1:5]

TypeError: 'set' object is not subscriptable
```

In [32]:
```
s5
```

Out[32]:
```
{(1+2j), 2, 3.4, False, 'yash'}
```

In [34]:
```
s4=s5.copy()
s4
```

Out[34]:
```
{(1+2j), 2, 3.4, False, 'yash'}
```

In [36]:
```
s4
```

Out[36]:
```
{(1+2j), 2, 3.4, False, 'yash'}
```

In [42]:
```
s4.add(2) #Duplicate is not allowed
s4
```

Out[42]:
```
{(1+2j), 2, 3.4, False, 'yash'}
```

In [40]:
```
s5.clear()
s5
```

Out[40]:
```
set()
```

In [44]:
```
del s5
```

In [46]:
```
s4.remove((1+2j))
s4
```

Out[46]:
```
{2, 3.4, False, 'yash'}
```

In [54]:
```
s4.remove(False,'yash') #Allows only 1 argument
s4
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[54], line 1
----> 1 s4.remove(False,'yash') #Allows only 1 argument
      2 s4

TypeError: set.remove() takes exactly one argument (2 given)
```

In [50]:
```
s3
```

Out[50]:
```
{'c', 'e', 'f', 'l', 'z'}
```

In [52]:
```
s3.discard('m')
s3
```

Out[52]:
```
{'c', 'e', 'f', 'l', 'z'}
```

In [56]:
```
s3.remove('m')
s3
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[56], line 1
----> 1 s3.remove('m')
      2 s3

KeyError: 'm'
```

In [58]:
```
s3.discard('f')
s3
```

Out[58]:
```
{'c', 'e', 'l', 'z'}
```

In [62]:
```
s3.pop()
```

Out[62]:
```
'c'
```

In [66]:
```
s2
```

Out[66]:
```
{3, 20, 30, 45, 100, 400}
```

In [68]:
```
s2.pop()
```

Out[68]:
```
3
```

In [70]:
```
for i in s2:
    print(i)
```

```
100
45
400
20
30
```

In [72]:
```
5 in s2
```

Out[72]: False

In [74]:
```
45 in s2
```

Out[74]: True

In [76]:
```
s2
```

Out[76]: {20, 30, 45, 100, 400}

In [80]:
```
s3
```

Out[80]: {'e', 'l'}

In [78]:
```
s2.update(s3)
s2
```

Out[78]: {100, 20, 30, 400, 45, 'e', 'l'}

# SET OPERATION

In [83]:
```
s6={1,2,3,4,5}
s7={4,5,6,7,8}
s8={8,9,10}
```

In [85]:
```
s6.union(s7)
```

Out[85]: {1, 2, 3, 4, 5, 6, 7, 8}

In [87]:
```
s6.union(s7,s8)
```

Out[87]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [89]:
```
s6 | s7
```

Out[89]: {1, 2, 3, 4, 5, 6, 7, 8}

In [91]:
```
s6|s7|s8
```

Out[91]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [93]:
```
print(s6)
print(s7)
print(s8)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7, 8}
{8, 9, 10}
```

In [95]:
```
s6.intersection(s7)
```

Out[95]: {4, 5}

In [97]:
```
s7.intersection(s8)
```

Out[97]: {8}

In [99]:
```
s6.intersection(s8)
```

Out[99]: set()

In [101…
```
s6 & s7
```

Out[101… {4, 5}

In [103…
```
print(s6)
print(s7)
print(s8)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7, 8}
{8, 9, 10}
```

In [105…
```
s6.difference(s7)
```

Out[105… {1, 2, 3}

In [107…
```
s6-s7
```

Out[107… {1, 2, 3}

In [109…
```
s7-s8
```

Out[109… {4, 5, 6, 7}

In [111…
```
s8-s7
```

Out[111… {9, 10}

In [113…
```
print(s6)
print(s7)
print(s8)
```

```
{1, 2, 3, 4, 5}
{4, 5, 6, 7, 8}
{8, 9, 10}
```

In [115…
```
s6.symmetric_difference(s7)
```

Out[115…
```
{1, 2, 3, 6, 7, 8}
```

In [1]:
```
# 10 March
```

# --superset

# --subset

# --disjoint

In [6]:
```
s11={1,2,3,4,5,6,7,8,9}
s12={3,4,5,6,7,8}
s13={10,20,30,40}
```

In [8]:
```
s12.issubset(s11)
```

Out[8]:
```
True
```

In [10]:
```
s11.issubset(s12)
```

Out[10]:
```
False
```

In [12]:
```
s11.issuperset(s12)
```

Out[12]:
```
True
```

In [14]:
```
s13.isdisjoint(s12)
```

Out[14]:
```
True
```

In [16]:
```
s12.issuperset(s11)
```

Out[16]:
```
False
```

In [18]:
```
s13.isdisjoint(s11)
```

Out[18]:
```
True
```

In [20]:
```
for i in s11:
    print(i)
```

```
1
2
3
4
5
6
7
8
9
```

In [22]:
```
for i in enumerate(s11):
    print(i)
```

```
(0, 1)
(1, 2)
(2, 3)
(3, 4)
(4, 5)
(5, 6)
(6, 7)
(7, 8)
(8, 9)
```

In [24]:
```
sum(s11)
```

Out[24]: 45

In [26]:
```
min(s11)
```

Out[26]: 1

In [28]:
```
len(s11)
```

Out[28]: 9

In [30]:
```
max(s11)
```

Out[30]: 9

# Dictionary

In [33]:
```
d={}
d
```

Out[33]: {}

In [35]:
```
type(d)
```

Out[35]: dict

In [37]:
```
d1={1:'one',2:'two',3:'three'}
d1
```

Out[37]: {1: 'one', 2: 'two', 3: 'three'}

In [39]:
```
d1.keys()
```

Out[39]: dict_keys([1, 2, 3])

In [41]:
```
d1.values()
```

Out[41]: dict_values(['one', 'two', 'three'])

In [43]:
```
d2=d1.copy()
d2
```

Out[43]: {1: 'one', 2: 'two', 3: 'three'}

In [45]:
```
d1.items()
```

Out[45]: dict_items([(1, 'one'), (2, 'two'), (3, 'three')])

In [47]:
```
d1[1]
```

Out[47]: 'one'

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: