March 7th, 2025

Set

In [3]:
```
s = { }
s
```

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

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

Out[4]:
```
dict
```

In [5]:
```
s1 = set()
type(s1)
```

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

In [6]:
```
s1
```

Out[6]:
```
set()
```

In [7]:
```
s2 = {20, 100, 3, 45}
s2
```

Out[7]:
```
{3, 20, 45, 100}
```

In [8]:
```
s3 = {'z', 'l', 'c', 'e', 'f'}
s3
```

Out[8]:
```
{'c', 'e', 'f', 'l', 'z'}
```

In [9]:
```
s4 = {1, 2.3, 'nit', 1+2j, [1,2,3], (4,5,6), True}
s4
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[9], line 1
----> 1 s4 = {1, 2.3, 'nit', 1+2j, [1,2,3], (4,5,6), True}
      2 s4

TypeError: unhashable type: 'list'
```

In [35]:
```
s5 = {2, 3.4, 'nit', 1+2j, False}
```

In [37]:
```
s5
```

Out[37]:
```
{(1+2j), 2, 3.4, False, 'nit'}
```

In [39]:
```
print(s1)
print(s2)
```

```
print(s3)
print(s5)
```

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

In [41]:
```
s2
```

Out[41]:
```
{3, 20, 45, 100}
```

In [43]:
```
s2.add(30)
```

In [45]:
```
s2
```

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

In [47]:
```
s2.add(200)
```

In [49]:
```
s2
```

Out[49]:
```
{3, 20, 30, 45, 100, 200}
```

In [51]:
```
s2[:]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[51], line 1
----> 1 s2[:]

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

In [53]:
```
s2
```

Out[53]:
```
{3, 20, 30, 45, 100, 200}
```

In [55]:
```
s2[1:5]
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[55], line 1
----> 1 s2[1:5]

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

In [57]:
```
s5
```

Out[57]:
```
{(1+2j), 2, 3.4, False, 'nit'}
```

In [59]:
```
s4 = s5.copy()
s4
```

Out[59]:
```
{(1+2j), 2, 3.4, False, 'nit'}
```

In [61]:
```
s4
```

Out[61]:
```
{(1+2j), 2, 3.4, False, 'nit'}
```

In [63]:
```
s4.add(2)
```

In [65]:
```
s4
```

Out[65]:
```
{(1+2j), 2, 3.4, False, 'nit'}
```

In [ ]:
```
s5
```

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

In [ ]:
```
s5
```

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

In [67]:
```
s4
```

Out[67]:
```
{(1+2j), 2, 3.4, False, 'nit'}
```

In [69]:
```
s4.remove((1+2j))
```

In [71]:
```
s4
```

Out[71]:
```
{2, 3.4, False, 'nit'}
```

In [73]:
```
s3
```

Out[73]:
```
{'c', 'e', 'f', 'l', 'z'}
```

In [75]:
```
s3.discard('m')
```

In [77]:
```
s3.remove('m')
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[77], line 1
----> 1 s3.remove('m')

KeyError: 'm'
```

In [79]:
```
s3
```

Out[79]:
```
{'c', 'e', 'f', 'l', 'z'}
```

In [81]:
```
s3.discard('f')
s3
```

Out[81]:
```
{'c', 'e', 'l', 'z'}
```

In [83]:
```
s3.pop()
```

Out[83]:
```
'c'
```

In [85]:
```
s3
```

Out[85]:
```
{'e', 'l', 'z'}
```

In [87]:
```
s2
```

Out[87]:
```
{3, 20, 30, 45, 100, 200}
```

In [91]:
```
s2.pop() # pop takes no arguments
```

Out[91]:
```
3
```

In [93]:
```
s2.pop(20)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[93], line 1
----> 1 s2.pop(20)

TypeError: set.pop() takes no arguments (1 given)
```

In [95]:
```
s2
```

Out[95]:
```
{20, 30, 45, 100, 200}
```

In [97]:
```
for i in s2:
    print(i)
```

```
100
200
45
20
30
```

In [99]:
```
for i in enumerate(s2):
    print(i)
```

```
(0, 100)
(1, 200)
(2, 45)
(3, 20)
(4, 30)
```

In [101…
```
s2
```

Out[101…
```
{20, 30, 45, 100, 200}
```

In [103…
```
5 in s2
```

Out[103…
```
False
```

In [105…
```
20 in s2
```

Out[105…
```
True
```

In [107…
```
s2
```

Out[107…
```
{20, 30, 45, 100, 200}
```

In [109…
```
s3
```

Out[109…
```
{'e', 'l', 'z'}
```

In [111…
```
s2.update(s3)
```

In [113…
```
s2
```

Out[113…
```
{100, 20, 200, 30, 45, 'e', 'l', 'z'}
```

SET OPERATION

In [116…
```
s6 = {1,2,3,4,5}
s7 = {4,5,6,7,8}
s8 = {8,9,10}
```

In [118…
```
s6.union(s7)
```

Out[118…
```
{1, 2, 3, 4, 5, 6, 7, 8}
```

In [120…
```
s6.union(s7, s8)
```

Out[120…
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

In [122…
```
s6 | s7
```

Out[122…
```
{1, 2, 3, 4, 5, 6, 7, 8}
```

In [124…
```
s6 | s7 | s8
```

Out[124…
```
{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

In [126…
```
print(s6)
print(s7)
print(s8)
```

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

In [128…
```
s6.intersection(s7)
```

Out[128…
```
{4, 5}
```

In [130…
```
s6.intersection(s8)
```

Out[130…
```
set()
```

In [132…
```
s7.intersection(s8)
```

Out[132…
```
{8}
```

In [134…
```
s6 & s7
```

Out[134…
```
{4, 5}
```

In [136…
```
print(s6)
print(s7)
```

```
print(s8)
```

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

In [138…
```
s6.difference(s7)
```

Out[138…
```
{1, 2, 3}
```

In [140…
```
s6 - s7
```

Out[140…
```
{1, 2, 3}
```

In [142…
```
s7 - s8
```

Out[142…
```
{4, 5, 6, 7}
```

In [144…
```
print(s6)
print(s7)
print(s8)
```

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

In [146…
```
s8 - s7
```

Out[146…
```
{9, 10}
```

In [148…
```
s6.symmetric_difference(s7)
```

Out[148…
```
{1, 2, 3, 6, 7, 8}
```

In [150…
```
s10 = {50, 4, 3, 10}
s10
```

Out[150…
```
{3, 4, 10, 50}
```

In [152…
```
print(s10)
```

```
{10, 3, 50, 4}
```

In [ ]:
```

```