

30 sep

set Data Structure

```
In [1]: s1=set()
        print(s1)
        print(type(s1))
```

```
set()
<class 'set'>
```

```
In [ ]:
```

```
In [16]: s2={3,5,10,40,50,10}
        s2
```

```
Out[16]: {3, 5, 10, 40, 50}
```

```
In [ ]:
```

Functions of Set

```
In [4]: s2
```

```
Out[4]: {3, 5, 10, 40, 50}
```

```
In [18]: s2.add('NIT')
```

```
In [9]: s2
```

```
Out[9]: {10, 3, 40, 5, 50, 'NIT'}
```

```
In [11]: s2.add(True)
        s2.add(5.10)
        s2.add(1+2j)
        s2
```

```
Out[11]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}
```

```
In [12]: s2.append(2.3)
```

```
-----
AttributeError                                Traceback (most recent call last)
Cell In[12], line 1
----> 1 s2.append(2.3)

AttributeError: 'set' object has no attribute 'append'
```

```
In [13]: s3=s2.copy()
        s3
```

```
Out[13]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}
```

In [14]: s3

Out[14]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}

In [15]: s4=s3.copy()
s4

Out[15]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}

In []:

In [21]: print(s)
print(s1)
print(s2)
print(s3)
print(s4)

```
-----
NameError                                Traceback (most recent call last)
Cell In[21], line 1
----> 1 print(s)
      2 print(s1)
      3 print(s2)

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

In [22]: print(s1)
print(s2)
print(s3)
print(s4)
print(s)

```
set()
{50, 3, 5, 40, 'NIT', 10}
{True, 3, 5, 5.1, (1+2j), 40, 10, 50, 'NIT'}
{True, 3, 5, 5.1, (1+2j), 40, 10, 50, 'NIT'}
```

```
-----
NameError                                Traceback (most recent call last)
Cell In[22], line 5
      3 print(s3)
      4 print(s4)
----> 5 print(s)

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

In []:

In [23]: s4

Out[23]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}

In [24]: len(s4)

Out[24]: 9

In [25]: s4

```
Out[25]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}
```

```
In [26]: s4.clear()  
s4
```

```
Out[26]: set()
```

```
In [40]: s3
```

```
Out[40]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT', True}
```

```
In [41]: s3.pop()
```

```
Out[41]: True
```

```
In [42]: s3
```

```
Out[42]: {(1+2j), 10, 3, 40, 5, 5.1, 50, 'NIT'}
```

```
In [43]: s3.pop(10)
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[43], line 1  
----> 1 s3.pop(10)  
  
TypeError: set.pop() takes no arguments (1 given)
```

```
In [44]: s3.remove(10)  
s3
```

```
Out[44]: {(1+2j), 3, 40, 5, 5.1, 50, 'NIT'}
```

```
In [ ]:
```

```
In [45]: s3
```

```
Out[45]: {(1+2j), 3, 40, 5, 5.1, 50, 'NIT'}
```

```
In [47]: s3.discard(1000)  
s3
```

```
Out[47]: {(1+2j), 3, 40, 5, 5.1, 50, 'NIT'}
```

```
In [48]: s3.discard(40)  
s3
```

```
Out[48]: {(1+2j), 3, 5, 5.1, 50, 'NIT'}
```

```
In [ ]:
```

```
In [49]: for i in s3:  
         print(i)
```

```
3
5
5.1
(1+2j)
50
NIT
```

```
In [54]: for i in enumerate (s3):
         print(i)
```

```
(0, 3)
(1, 5)
(2, 5.1)
(3, (1+2j))
(4, 50)
(5, 'NIT')
```

```
In [ ]:
```

set operation

union

```
In [55]: A={1,2,3,4,5,6}
         B={4,5,6,7,8}
         C={4,9,10}
```

```
In [56]: A|B
```

```
Out[56]: {1, 2, 3, 4, 5, 6, 7, 8}
```

```
In [57]: B.union(A,B)
```

```
Out[57]: {1, 2, 3, 4, 5, 6, 7, 8}
```

```
In [58]: B|A|C
```

```
Out[58]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
```

```
In [59]: print(A)
         print(B)
         print(C)
```

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

```
In [ ]:
```

```
In [60]: A & B
```

```
Out[60]: {4, 5, 6}
```

```
In [61]: B.intersection(C)
```

Out[61]: {4}

In [62]: A & C

Out[62]: {4}

In []:

In [63]: A

Out[63]: {1, 2, 3, 4, 5, 6}

In [64]: A.update(B)

In [65]: A

Out[65]: {1, 2, 3, 4, 5, 6, 7, 8}

In [66]: B

Out[66]: {4, 5, 6, 7, 8}

In [68]: B.update(C)
B

Out[68]: {4, 5, 6, 7, 8, 9, 10}

In [69]: print(A)
print(B)
print(C)

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

In [70]: A-B

Out[70]: {1, 2, 3}

In [71]: B-A

Out[71]: {9, 10}

In [72]: B.difference(C)

Out[72]: {5, 6, 7, 8}

In [73]: print(A)
print(B)
print(C)

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

In [74]: B.symmetric_difference(A)

Out[74]: {1, 2, 3, 9, 10}

```
In [75]: A1 = {1,2,3,4,5,6}
        B1 = {4,5,6,7,8}
        C1 = {3,9,10}
```

```
In [76]: A1.symmetric_difference(B1)
```

Out[76]: {1, 2, 3, 7, 8}

```
In [77]: B1.symmetric_difference(C1)
```

Out[77]: {3, 4, 5, 6, 7, 8, 9, 10}

```
In [78]: A1
```

Out[78]: {1, 2, 3, 4, 5, 6}

```
In [79]: A2 = {1,2,3,4,5,6}
        B2 = {4,5,6,7,8}
        C2 = {3,9,10}
```

```
In [80]: A2.symmetric_difference(B2)
```

Out[80]: {1, 2, 3, 7, 8}

```
In [81]: A2.symmetric_difference_update(B2)
```

```
In [82]: A2
```

Out[82]: {1, 2, 3, 7, 8}

```
In [ ]:
```