TUPLE

In [1]:
```
t=()
t
```

Out[1]:
```
()
```

In [2]:
```
tup1=(20,40,50)
tup1
```

Out[2]:
```
(20, 40, 50)
```

In [3]:
```
tup2=(4.5,8.9,7.7)
tup2
```

Out[3]:
```
(4.5, 8.9, 7.7)
```

In [4]:
```
tup3=('two','five','seven')
tup3
```

Out[4]:
```
('two', 'five', 'seven')
```

In [5]:
```
tup4=('joseph',35,(70,90),(25,45))
tup4
```

Out[5]:
```
('joseph', 35, (70, 90), (25, 45))
```

In [6]:
```
tup5=(5,'jon',3.5)
tup5
```

Out[6]:
```
(5, 'jon', 3.5)
```

In [7]:
```
tup6=('python',35,(70,90),(25,45),('hello','world'),(40,20,30))
tup6
```

Out[7]:
```
('python', 35, (70, 90), (25, 45), ('hello', 'world'), (40, 20, 30))
```

In [8]:
```
len(tup6)
```

Out[8]:
```
6
```

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

Out[9]:
```
tuple
```

In [10]:
```
t.count(10)
```

Out[10]:
```
0
```

In [11]:
```
t7=(5,25,5.6,'six',True,(4+7j),5)
t7
```

Out[11]:
```
(5, 25, 5.6, 'six', True, (4+7j), 5)
```

In [12]:
```
t7.count(5)
```

Out[12]: 2

Tuple Indexing

In [16]:
```
tup6.index(35)
```

Out[16]: 1

In [17]:
```
tup2[0]
```

Out[17]: 4.5

In [19]:
```
tup5[1]
```

Out[19]: 'jon'

In [21]:
```
tup6[0][0]
```

Out[21]: 'p'

In [22]:
```
tup4[-1]
```

Out[22]: (25, 45)

In [23]:
```
tup5[-2]
```

Out[23]: 'jon'

Tuple slicing

In [25]:
```
mytuple=('john','tom','brock,''seven','eight','nine')
mytuple
```

Out[25]: ('john', 'tom', 'brock,seven', 'eight', 'nine')

In [26]:
```
mytuple[2:5]
```

Out[26]: ('brock,seven', 'eight', 'nine')

In [27]:
```
mytuple[0:3]
```

Out[27]: ('john', 'tom', 'brock,seven')

In [31]:
```
mytuple[-2:-5]
```

Out[31]: ()

In [32]:
```
t8=(30,40,50)
t8
```

Out[32]: (30, 40, 50)

In [33]:
```
t9=t8*3
t9
```

Out[33]: (30, 40, 50, 30, 40, 50, 30, 40, 50)

In [35]:
```
print(len(t8))
print(len(t9))
```

```
3
9
```

In [36]:
```
t9[2]
```

Out[36]: 50

In [37]:
```
for i in t8:
    print(i)
```

```
30
40
50
```

In [38]:
```
for i in enumerate(t8):
    print(i)
```

```
(0, 30)
(1, 40)
(2, 50)
```

In [39]:
```
t9[5]
```

Out[39]: 50

SET

In [41]:
```
s={}
type(s)
```

Out[41]: dict

In [44]:
```
s=set()
print(s)
type(s)
```

```
set()
```

Out[44]: set

In [45]:
```
s1={20,30,40,30,50,60,90,80,80}
print(s1)
s1
```

```
{80, 50, 20, 40, 90, 60, 30}
```

Out[45]: {20, 30, 40, 50, 60, 80, 90}

In [46]:
```
type(s1)
```

Out[46]: set

In [47]:
```
s2={250,50,30,40,70}
s2
```

Out[47]: {30, 40, 50, 70, 250}

In [48]:
```
type(s2)
```

Out[48]: set

In [50]:
```
s3=s1.copy()
```

In [51]:
```
print(s3)
```

{80, 50, 20, 40, 90, 60, 30}

In [53]:
```
s3.add(70)
print(s3)
```

{80, 50, 20, 70, 40, 90, 60, 30}

In [54]:
```
s3.add(10)
s3.add('python')
s3.add(7.5)
s3.add((3+2j))
s3.add(True)
print(s3)
s3
```

{True, 70, 7.5, (3+2j), 10, 80, 20, 90, 30, 40, 'python', 50, 60}

Out[54]: {(3+2j), 10, 20, 30, 40, 50, 60, 7.5, 70, 80, 90, True, 'python'}

In [57]:
```
s3.remove(60)
print(s3)
```

{True, 70, (3+2j), 10, 80, 20, 90, 30, 40, 'python', 50}

In [58]:
```
s3.discard(60)
print(s3)
```

{True, 70, (3+2j), 10, 80, 20, 90, 30, 40, 'python', 50}

In [61]:
```
s3.pop()
print(s3)
```

{70, (3+2j), 10, 80, 20, 90, 30, 40, 'python', 50}

In [62]:
```
90 in s3
```

Out[62]: True

In [63]:
```
200 in s3
```

Out[63]: False

SET Operations

In [67]:
```
a={1,2,3,4,5}
b={4,5,6,7,8}
c={8,9,10}
```

In [68]:
```
u=a.union(b)
print(u)
```

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

In [69]:
```
print('a:',a)
print('b:',b)
print('c:',c)
```

```
a: {1, 2, 3, 4, 5}
b: {4, 5, 6, 7, 8}
c: {8, 9, 10}
```

In [70]:
```
a|b
```

Out[70]: {1, 2, 3, 4, 5, 6, 7, 8}

In [71]:
```
b|c
```

Out[71]: {4, 5, 6, 7, 8, 9, 10}

In [72]:
```
a|b|c
```

Out[72]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

In [73]:
```
a|c
```

Out[73]: {1, 2, 3, 4, 5, 8, 9, 10}

In [74]:
```
b|c
```

Out[74]: {4, 5, 6, 7, 8, 9, 10}

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

Out[75]: {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}

Intersection

In [ ]:
```

```

In [77]:
```
i=a.intersection(b)
print(i)
```

```
{4, 5}
```

In [78]:
```
i=b.intersection(c)
print(i)
```

```
{8}
```

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

Out[79]: {4, 5}

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

Out[80]: {8}

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

Out[81]:
```
set()
```

In [82]:
```
a & b & c
```

Out[82]:
```
set()
```

Difference

In [83]:
```
print('a:',a)
print('b:',b)
print('c:',c)
```

```
a: {1, 2, 3, 4, 5}
b: {4, 5, 6, 7, 8}
c: {8, 9, 10}
```

In [85]:
```
a.difference(b)
```

Out[85]:
```
{1, 2, 3}
```

In [86]:
```
b.difference(c)
```

Out[86]:
```
{4, 5, 6, 7}
```

In [87]:
```
a.difference(c)
```

Out[87]:
```
{1, 2, 3, 4, 5}
```

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

Out[88]:
```
{4, 5, 6, 7}
```

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

Out[89]:
```
{8, 9, 10}
```

In [90]:
```
a-b-c
```

Out[90]:
```
{1, 2, 3}
```

In [91]:
```
c-a-b
```

Out[91]:
```
{9, 10}
```