13th Nov

- TUPLE

In [4]:
```
t1 = ('Bkp',10,34.5,[12,'code'],(2+3j))
```

In [6]:
```
type(t1)
```

Out[6]:
```
tuple
```

- Tuple indexing & Slicing

In [10]:
```
t1[3]
```

Out[10]:
```
[12, 'code']
```

In [12]:
```
t1[-2]
```

Out[12]:
```
[12, 'code']
```

In [14]:
```
t1[-1:-2]
```

Out[14]:
```
()
```

In [16]:
```
t1[-3:-2]
```

Out[16]:
```
(34.5,)
```

In [18]:
```
t1[:-1]
```

Out[18]:
```
('Bkp', 10, 34.5, [12, 'code'])
```

- Loop through Tuple

In [27]:
```
for i in t1:
    print(i)
```

```
Bkp
10
34.5
[12, 'code']
(2+3j)
```

In [31]:
```
for i in enumerate(t1):
    print(i)
```

```
(0, 'Bkp')
(1, 10)
(2, 34.5)
(3, [12, 'code'])
(4, (2+3j))
```

- count

In [36]:
```
t1.count('Bkp')
```

Out[36]: 1

In [38]:
```
t1 = t1 = ('Bkp',10,34.5,37,10,[12,'code'],(2+3j))
```

In [40]:
```
t1.count(10)
```

Out[40]: 2

- Membership

In [43]:
```
if 'Bkp' in t1:
    print('Bkp is in tuple')
else:
    print('Bkp is not in tuple')
```

```
Bkp is in tuple
```

In [45]:
```
if 35 in t1:
    print('35 is in tuple')
else:
    print('35 is not in tuple')
```

```
35 is not in tuple
```

In [47]:
```
46 in t1
```

Out[47]: False

In [51]:
```
10 in t1
```

Out[51]: True

In [53]:
```
t1.index(10)
```

Out[53]: 1

In [55]:
```
t1.index((2+3j))
```

Out[55]: 6

SET

In [58]:
```
s1 =  {20,30,40,50,60,70,80}
s1
```

Out[58]: {20, 30, 40, 50, 60, 70, 80}

In [60]:
```
type(s1)
```

Out[60]: set

In [62]:
```
len(s1)
```

Out[62]: 7

In [66]:
```
s2 = {20,30,4.4,'bkp',(2+3j)}
```

In [68]:
```
s3 = set()
```

- Loop through Set

In [72]:
```
for i in s1 :
    print(i)
```

```
80
50
20
70
40
60
30
```

In [78]:
```
for i in enumerate (s1):
    print(i)
```

```
(0, 80)
(1, 50)
(2, 20)
(3, 70)
(4, 40)
(5, 60)
(6, 30)
```

- Membership

In [81]:
```
s1
```

Out[81]: {20, 30, 40, 50, 60, 70, 80}

In [83]:
```
20 in s1
```

Out[83]: True

In [87]:
```
100 in s1
```

Out[87]: False

In [95]:
```
50 in s1
```

Out[95]: True

In [102…
```
if 40 in s1:
    print('40 is present in s1 set')
else:
    print('40 is not present in s1 set')
```

```
40 is present in s1 set
```

In [100…
```
if 500 in s1:
    print('True')
else:
    print('False')
```

```
False
```

- add & remove items

In [105…
```
s1
```

Out[105… {20, 30, 40, 50, 60, 70, 80}

In [113…
```
s1.add('Hello')
```

In [109…
```
s1
```

Out[109… {20, 30, 40, 50, 60, 70, 80, 'Hello'}

In [119…
```
s1.update([100,'jupyter'])
```

In [121…
```
s1
```

Out[121… {100, 20, 30, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}

In [123…
```
s1.remove(20)
```

In [126…
```
s1
```

Out[126… {100, 30, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}

In [130…
```
s1.discard(30)
```

In [132…
```
s1
```

Out[132… {100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}

In [134…
```
s2
```
Out[134…
```
{(2+3j), 20, 30, 4.4, 'bkp'}
```
In [136…
```
s2.clear()
```
In [138…
```
s2
```
Out[138…
```
set()
```

- Copy Set

In [141…
```
s1
```
Out[141…
```
{100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```
In [143…
```
s1 = s2
```
In [145…
```
s2
```
Out[145…
```
set()
```
In [147…
```
id(s1),id(s2)
```
Out[147…
```
(2586579248384, 2586579248384)
```
In [159…
```
s1 = {100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```
In [161…
```
s1 = s2.copy()
```
In [163…
```
s2
```
Out[163…
```
set()
```
In [165…
```
s1
```
Out[165…
```
set()
```
In [189…
```
s1 = {100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```
In [191…
```
s1
```
Out[191…
```
{100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```
In [193…
```
s4 = s1
```
In [195…
```
s4
```
Out[195…
```
{100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```

In [197…
```
s1 = s4.copy()
```

In [199…
```
s1
```

Out[199…
```
{100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```

In [201…
```
s4
```

Out[201…
```
{100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```

In [203…
```
s5=s4.copy()
```

In [205…
```
s5
```

Out[205…
```
{100, 40, 50, 60, 70, 80, 'Hello', 'jupyter'}
```

- Set Operation

In [218…
```
i = {10,30,40,50,60,70,80}
j = {40,50,78,90}
k = {78,91,45,65}
```

In [220…
```
i | j
```

Out[220…
```
{10, 30, 40, 50, 60, 70, 78, 80, 90}
```

In [222…
```
k | i
```

Out[222…
```
{10, 30, 40, 45, 50, 60, 65, 70, 78, 80, 91}
```

In [224…
```
i.union(k)
```

Out[224…
```
{10, 30, 40, 45, 50, 60, 65, 70, 78, 80, 91}
```

- Intersection

In [231…
```
i
```

Out[231…
```
{10, 30, 40, 50, 60, 70, 80}
```

In [233…
```
j
```

Out[233…
```
{40, 50, 78, 90}
```

In [235…
```
k
```

Out[235…
```
{45, 65, 78, 91}
```

In [237…
```
i & j
```

Out[237… {40, 50}

In [244…
```
k.intersection(j)
```

Out[244… {78}

- Difference

In [247…
```
i
```

Out[247… {10, 30, 40, 50, 60, 70, 80}

In [249…
```
j
```

Out[249… {40, 50, 78, 90}

In [251…
```
k
```

Out[251… {45, 65, 78, 91}

In [253…
```
i - j
```

Out[253… {10, 30, 60, 70, 80}

In [255…
```
j - k
```

Out[255… {40, 50, 90}

In [257…
```
k - i
```

Out[257… {45, 65, 78, 91}

In [259…
```
j.difference(i)
```

Out[259… {78, 90}

- Symmetric Difference

In [262…
```
 i
```

Out[262… {10, 30, 40, 50, 60, 70, 80}

In [264…
```
j
```

Out[264… {40, 50, 78, 90}

In [266…
```
k
```

Out[266… {45, 65, 78, 91}

In [268…
```
i ^ j
```
Out[268… {10, 30, 60, 70, 78, 80, 90}

In [270…
```
k.symmetric_difference(i)
```
Out[270… {10, 30, 40, 45, 50, 60, 65, 70, 78, 80, 91}

In [272…
```
i.symmetric_difference_update(j)
```
In [274…
```
j
```
Out[274… {40, 50, 78, 90}

In [276…
```
i
```
Out[276… {10, 30, 60, 70, 78, 80, 90}

- Subset , Superset & Disjoint

In [279…
```
i
```
Out[279… {10, 30, 60, 70, 78, 80, 90}

In [285…
```
j
```
Out[285… {40, 50, 78, 90}

In [287…
```
k
```
Out[287… {45, 65, 78, 91}

In [289…
```
j.issubset(i)
```
Out[289… False

In [291…
```
k.issubset(j)
```
Out[291… False

In [293…
```
j.issubset(k)
```
Out[293… False

In [295…
```
i.issuperset(j)
```
Out[295… False

In [297…
```
j.issuperset(i)
```

Out[297… False

In [299…
```
k.issuperset(j)
```

Out[299… False

In [305…
```
i.add(40)
```

In [307…
```
i.update([50,60])
```

In [309…
```
i
```

Out[309… {10, 30, 40, 50, 60, 70, 78, 80, 90}

In [312…
```
j
```

Out[312… {40, 50, 78, 90}

In [314…
```
k
```

Out[314… {45, 65, 78, 91}

In [316…
```
j.issubset(i)
```

Out[316… True

In [318…
```
i.isdisjoint(j)
```

Out[318… False

In [322…
```
k.isdisjoint(i)
```

Out[322… False

In [324…
```
i.isdisjoint(k)
```

Out[324… False

In [326…
```
max(i)
```

Out[326… 90

In [328…
```
min(i)
```

Out[328… 10

In [330…
```
sum(i)
```

Out[330… 508

In [332…
```
list(enumerate(i))
```

Out[332…
```
[(0, 70),
 (1, 40),
 (2, 10),
 (3, 78),
 (4, 80),
 (5, 50),
 (6, 90),
 (7, 60),
 (8, 30)]
```

Dict

In [335…
```
d1 = {}
```

In [337…
```
type(d1)
```

Out[337… dict

In [339…
```
d2 = dict()
```

In [341…
```
type(d2)
```

Out[341… dict

In [343…
```
d1 = {'tg':'hyd','od':'bbsr','tn':'chn'}
```

In [345…
```
d1
```

Out[345… {'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn'}

In [347…
```
d1.keys()
```

Out[347… dict_keys(['tg', 'od', 'tn'])

In [349…
```
d1.values()
```

Out[349… dict_values(['hyd', 'bbsr', 'chn'])

In [351…
```
d1.items()
```

Out[351… dict_items([('tg', 'hyd'), ('od', 'bbsr'), ('tn', 'chn')])

In [355…
```
d2 ={'name':'bkp','obj':[20,40],'cmp':(2+3j)}
```

In [357…
```
d2
```

Out[357… {'name': 'bkp', 'obj': [20, 40], 'cmp': (2+3j)}

In [359…
```
k = {'a','b','c','d'}
```

In [371…
```
d3 = dict.fromkeys(k)
```

In [367…
```
d3
```

Out[367…
```
{'b': None, 'd': None, 'a': None, 'c': None}
```

In [373…
```
k = {'a','b','c','d'}
v = 30
```

In [375…
```
d3 =dict.fromkeys(k,v)
```

In [377…
```
d3
```

Out[377…
```
{'b': 30, 'd': 30, 'a': 30, 'c': 30}
```

In [381…
```
k = {'tg','od','tn'}
v = ['hyd','bbsr','chn']
```

In [383…
```
d3 = dict.fromkeys(k,v)
```

In [385…
```
d3
```

Out[385…
```
{'tn': ['hyd', 'bbsr', 'chn'],
 'tg': ['hyd', 'bbsr', 'chn'],
 'od': ['hyd', 'bbsr', 'chn']}
```

In [387…
```
v.append('idk')
```

In [389…
```
d3
```

Out[389…
```
{'tn': ['hyd', 'bbsr', 'chn', 'idk'],
 'tg': ['hyd', 'bbsr', 'chn', 'idk'],
 'od': ['hyd', 'bbsr', 'chn', 'idk']}
```

In [391…
```
d1
```

Out[391…
```
{'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn'}
```

In [393…
```
d1['tg']
```

Out[393…
```
'hyd'
```

In [395…
```
d1.get('tg')
```

Out[395…
```
'hyd'
```

In [399…
```
d1.get('tn')
```

Out[399…
```
'chn'
```

- Add,Remove & Change

In [445…
```
d1 = {'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn'}
```

In [447…
```
d1['tg']= {'mdr'}
```

In [449…
```
d1
```

Out[449…
```
{'tg': {'mdr'}, 'od': 'bbsr', 'tn': 'chn'}
```

In [451…
```
d3 = {'tg':'vsk'}
d1.update(d3)
```

In [453…
```
d1
```

Out[453…
```
{'tg': 'vsk', 'od': 'bbsr', 'tn': 'chn'}
```

In [459…
```
d1['ka']='blr'
```

In [461…
```
d1
```

Out[461…
```
{'tg': 'vsk', 'od': 'bbsr', 'tn': 'chn', 'ka': 'blr'}
```

In [463…
```
d1.pop('ka')
```

Out[463…
```
'blr'
```

In [465…
```
d1
```

Out[465…
```
{'tg': 'vsk', 'od': 'bbsr', 'tn': 'chn'}
```

In [467…
```
d1.popitem()
```

Out[467…
```
('tn', 'chn')
```

In [471…
```
del[d1['tg']]
```

In [473…
```
d1
```

Out[473…
```
{'od': 'bbsr'}
```

- Copy

In [538…
```
d1 = {'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn'}
```

In [540…
```
d2 = dict()
```

In [558…
```
d2 = d1
```

In [544…
```
id (d1),id(d2)
```
Out[544…
```
(2586593822528, 2586593822528)
```

In [546…
```
d2=d1.copy()
```

In [548…
```
d2
```
Out[548…
```
{'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn'}
```

In [550…
```
id (d1),id(d2)
```
Out[550…
```
(2586593822528, 2586599572736)
```

In [552…
```
d1['gj'] = 'ahd'
```

In [554…
```
d1
```
Out[554…
```
{'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn', 'gj': 'ahd'}
```

In [560…
```
d2
```
Out[560…
```
{'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn', 'gj': 'ahd'}
```

- Loop through a Dict

In [563…
```
d1
```
Out[563…
```
{'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn', 'gj': 'ahd'}
```

In [571…
```
for i in d1:
    print(i ,':', d1[i])
```
```
tg : hyd
od : bbsr
tn : chn
gj : ahd
```

In [579…
```
for i in (d1):
    print(i)
```
```
tg
od
tn
gj
```

In [581…
```
for i in (d1):
    print(d1[i])
```
```
hyd
bbsr
chn
ahd
```

- Dict Membership

In [584…
```
d1
```

Out[584…
```
{'tg': 'hyd', 'od': 'bbsr', 'tn': 'chn', 'gj': 'ahd'}
```

In [586…
```
'tg' in d1
```

Out[586…
```
True
```

In [588…
```
'op' in d1
```

Out[588…
```
False
```

In [590…
```
all(d1)
```

Out[590…
```
True
```

In [592…
```
any(d1)
```

Out[592…
```
True
```

In [ ]:

In [ ]: