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

In [2]:
```
print(a)
print(b)
print(c)
```

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

In [6]:
```
a.symmetric_difference(b)
```

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

In [5]:
```
a^b
```

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

In [19]:
```
b.symmetric_difference(c)
```

Out[19]: {4, 5, 6, 7, 9, 10}

In [25]:
```
c.symmetric_difference(a)
```

Out[25]: {1, 2, 3, 6, 7, 8}

In [28]:
```
a.symmetric_difference_update(b)
a
```

Out[28]: {1, 2, 3, 4, 5}

Superset Subset Disjoint

In [10]:
```
s1={1,2,3,4,5,6,7,8,9}
s2={3,4,5,6,7,8,9}
s3={10,20,30,40}
```

In [12]:
```
s1.issuperset(s2)
```

Out[12]: True

In [30]:
```
s2.issubset(s1)
```

Out[30]: True

In [14]:
```
s3.issuperset(s1)
```

Out[14]: False

In [16]:
```
s1.isdisjoint(s2)
```

Out[16]: False

In [17]:
```
s1.isdisjoint(s3)
```

Out[17]: True

In [31]:
```
s4 = {1,2,3,4,5,6,7,8,9}
s5 = {3,4,5,6,7,8}
s6 = {10,20,30,40}
```

In [32]:
```
s6.issubset(s5)
```

Out[32]: False

In [33]:
```
s6.issubset(s4)
```

Out[33]: False

In [34]:
```
s7 = {1,2,3,4,5,6,7,8,9}
s8 = {15,25,35}
s9 = {10,20,30,40}
```

In [35]:
```
s7.issuperset(s8)
```

Out[35]: False

In [36]:
```
s8.issubset(s7)
```

Out[36]: False

In [37]:
```
s7.isdisjoint(s8)
```

Out[37]: True

Dictionary

In [40]:
```
d = {}
d
```

Out[40]: {}

In [41]:
```
type(d)
```

Out[41]: dict

In [42]:
```
d1 = {1 : 'one', 2: 'two', 3: 'three', 'four': 4, 'l' : [1,2,3]}
d1
```

Out[42]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [43]:
```
d1
```

Out[43]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [44]:
```
d2=d1.copy()
```

In [45]:
```
d2
```

Out[45]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [46]:
```
d1.items()
```

Out[46]: dict_items([(1, 'one'), (2, 'two'), (3, 'three'), ('four', 4), ('l', [1, 2, 3])])

In [47]:
```
len(d1.items())
```

Out[47]: 5

In [48]:
```
d1
```

Out[48]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [49]:
```
d1[:]
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[49], line 1
----> 1 d1[:]

KeyError: slice(None, None, None)
```

In [50]:
```
d1
```

Out[50]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [51]:
```
d1['four']
```

Out[51]: 4

In [52]:
```
d1['one']
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
Cell In[52], line 1
----> 1 d1['one']

KeyError: 'one'
```

In [53]:
```
d1
```

Out[53]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [54]:
```
d1.keys()
```

Out[54]: dict_keys([1, 2, 3, 'four', 'l'])

In [55]:
```
d1.values()
```

Out[55]: dict_values(['one', 'two', 'three', 4, [1, 2, 3]])

In [56]:
```
d1
```

Out[56]: {1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}

In [57]:
```
d1.values()
```

Out[57]:
```
dict_values(['one', 'two', 'three', 4, [1, 2, 3]])
```

In [58]:
```
d1
```

Out[58]:
```
{1: 'one', 2: 'two', 3: 'three', 'four': 4, 'l': [1, 2, 3]}
```

In [59]:
```
d1.pop('l')
```

Out[59]:
```
[1, 2, 3]
```

In [60]:
```
d1
```

Out[60]:
```
{1: 'one', 2: 'two', 3: 'three', 'four': 4}
```

In [61]:
```
100 in d1
```

Out[61]:
```
False
```

Range

In [62]:
```
range(10)
```

Out[62]:
```
range(0, 10)
```

In [63]:
```
range(10,20)
```

Out[63]:
```
range(10, 20)
```

In [64]:
```
range(10,20,5)
```

Out[64]:
```
range(10, 20, 5)
```

In [65]:
```
list(range(10))
```

Out[65]:
```
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

In [66]:
```
list(range(10,20))
```

Out[66]:
```
[10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

In [67]:
```
list(range(10,20,5))
```

Out[67]:
```
[10, 15]
```

In [ ]:
```

```