Sets

A set is a collection which is unordered, mutable and does not allow duplicates.

Note: Set elements must be of an immutable type.

In [1]:
```
#defining a set:
my_set = {}
my_set = set()


my_set = {1,2,3,10,12,15}
my_set = set([1,2,3,10,12,15])
my_set = set((1,2,3,10,12,15))
print(my_set)
```

```
{1, 2, 3, 10, 12, 15}
```

In [28]:
```
str_set = set("Banana")
print(str_set)
```

```
{'n', 'B', 'a'}
```

Sets are unorderd and unindexed, so you can't access a item in a set by index.

In [3]:
```
#adding an item to the a set:
my_set.add(5)
my_set.add(6)
print(my_set)
```

```
{1, 2, 3, 5, 6, 10, 12, 15}
```

In [30]:
```
#update a set with another set:
s1 = {'a', 'b', 'c'}
s2 = {'d', 'e', 'f','a'}

s1.update(s2)
print(s1)
```

```
{'d', 'e', 'b', 'f', 'a', 'c'}
```

In [4]:
```
#removing an item from a set:
my_set.remove(5)
print(my_set)
```

```
{1, 2, 3, 6, 10, 12, 15}
```

In [8]:
```
my_set.remove(7)
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-8-3b6ad967bf1d> in <module>
----> 1 my_set.remove(7)

KeyError: 7
```

In [9]:
```
my_set.discard(7)
```

In [10]:
```
#removing an item randomly from a set:
x = my_set.pop()
print(x)
```

```
1
```

In [ ]:
```
#clears a set
my_set.clear()
```

In [14]:
```
#checking membership in a set:
5 in my_set
```

Out[14]:
```
False
```

In [15]:
```
2 in my_set
```

Out[15]:
```
True
```

In [16]:
```
from IPython.display import Image
from IPython.core.display import HTML
Image(url= "./union.png")
```

Out[16]:


In [19]:
```
#union of two sets:
s1 = {'eins', 'zwei','drei'}
s2 = {'vier', 'fünf', 'sechs'}

s3 = s1.union(s2)
print(s3)
```

```
{'eins', 'sechs', 'fünf', 'drei', 'vier', 'zwei'}
```

In [21]:
```
Image(url= "./intersection.png")
```

Out[21]:


In [23]:
```
s1 = {1,2,3,4}
s2 = {3,4,5,6}

s3 = s1.intersection(s2)
print(s3)
```

```
{3, 4}
```

In [25]:
```
s1 = {'apple', 'banana', 'cherry', 'orange'}
for item in s1:
    print(item)
```

```
cherry
banana
orange
apple
```

In [ ]:
```

```

Go to the link below for more:
https://realpython.com/python-sets/