Lecture 20

Sets part 1

creating sets

In [1]:
```
my_var = {1,2,3,4}
print(my_var)
print(type(my_var))
```

```
{1, 2, 3, 4}
<class 'set'>
```

set() method

In [3]:
```
another_set = set([10,20,30,40])
print(another_set)
print(type(another_set))
```

```
{40, 10, 20, 30}
<class 'set'>
```

empty set

In [4]:
```
abc = {}
print(abc)
print(type(abc))
```

```
{}
<class 'dict'>
```

In [5]:
```
xyz = set()
print(xyz)
print(type(xyz))
```

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

properties of set

1) unordered

In [6]:
```
my_set = {3,1,4,2}
print(my_set)
```

```
{1, 2, 3, 4}
```

2) No indexing/slicing

In [7]:
```
a = {'animals','ball','cat'}
print(a[0])
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[7], line 2
      1 a = {'animals','ball','cat'}
----> 2 print(a[0])

TypeError: 'set' object is not subscriptable
```

In [8]:
```
a = {'animals','ball','cat'}
print(a[0:2])
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[8], line 2
      1 a = {'animals','ball','cat'}
----> 2 print(a[0:2])

TypeError: 'set' object is not subscriptable
```

3. unique elements

In [9]:
```
my_set = {8,10,12,14,15,12,17,18,10,13,14,16,15,14,12,10,17,52,65}
print(my_set)
```

```
{65, 8, 10, 12, 13, 14, 15, 16, 17, 18, 52}
```

4. Iterable

In [10]:
```
my_set = {14,25,37,41,23}
for element in my_set:
    print(element)
```

```
25
37
23
41
14
```

5. Hashable elements

nly hashable objects (objects with a fixed hash value) can be added to a set. This means that sets cannot contain mutable types like lists or dictionaries.

In [11]:
```
my_set = {1,2,3,"a",3.6, (10,20)}
print(my_set)
```

```
{1, 2, 3, 3.6, 'a', (10, 20)}
```

In [12]:
```
my_set1 = {1,2,3,3.6,'b', [14,15,16]}
print(my_set1)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[12], line 1
----> 1 my_set1 = {1,2,3,3.6,'b', [14,15,16]}
      2 print(my_set1)

TypeError: unhashable type: 'list'
```

In [13]:
```
x = {{'a':1, 'b':2}}
print(x)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[13], line 1
----> 1 x = {{'a':1, 'b':2}}
      2 print(x)

TypeError: unhashable type: 'dict'
```

In [ ]:
```

```