3rd -- Python Datastructure

- list
- tuple
- set
- dict

```
In [1]: l = []
        l
```

Out[1]: []

```
In [2]: type(l)
```

Out[2]: list

```
In [4]: len(l)
```

Out[4]: 0

```
In [5]: l
```

Out[5]: []

```
In [6]: l.append(10)
        l
```

Out[6]: [10]

```
In [7]: l.append(20)
        l
```

Out[7]: [10, 20]

```
In [8]: l.append(30)
        l.append(40)
        l.append(50)
        l
```

Out[8]: [10, 20, 30, 40, 50]

```
In [9]: l1 = l.copy()
        l1
```

Out[9]: [10, 20, 30, 40, 50]

```
In [10]: print(l)
         print(l1)
```

```
[10, 20, 30, 40, 50]
[10, 20, 30, 40, 50]
```

In [11]: `l1.append('hi',1+2j,2.3,True)`

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[11], line 1
----> 1 l1.append('hi',1+2j,2.3,True)

TypeError: list.append() takes exactly one argument (4 given)
```

In [12]: `l1`

Out[12]: `[10, 20, 30, 40, 50]`

In [17]:
```
l1.append(2.3)
l1.append(2+3j)
l1.append(True)
l1.append('hi')
l1
```

Out[17]:
```
[10,
 20,
 30,
 40,
 50,
 2.3,
 (2+3j),
 True,
 'hi',
 2.3,
 (2+3j),
 True,
 'hi',
 2.3,
 (2+3j),
 True,
 'hi',
 2.3,
 (2+3j),
 True,
 'hi',
 2.3,
 (2+3j),
 True,
 'hi']
```

In [18]:
```
print(l)
print(l1)
```

```
[10, 20, 30, 40, 50]
[10, 20, 30, 40, 50, 2.3, (2+3j), True, 'hi', 2.3, (2+3j), True, 'hi', 2.3,
(2+3j), True, 'hi', 2.3, (2+3j), True, 'hi', 2.3, (2+3j), True, 'hi']
```

```
In [19]:  print(len(l))
          print(len(l1))

          5
          25

In [20]:  l

Out[20]:  [10, 20, 30, 40, 50]

In [22]:  l.append(10)
          l

Out[22]:  [10, 20, 30, 40, 50, 10, 10]

In [23]:  l3= [1,2,3,4,5,6,7,8,'hi','by', 1+2j, True]

In [24]:  l3

Out[24]:  [1, 2, 3, 4, 5, 6, 7, 8, 'hi', 'by', (1+2j), True]

In [27]:  l3.clear()
          l3

Out[27]:  []

In [29]:  del l3
          l3
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[29], line 1
----> 1 del l3
      2 l3

NameError: name 'l3' is not defined
```

```
In [30]:  l.count(20)

Out[30]:  1

In [31]:  l1.count(20)

Out[31]:  1

In [32]:  l1.count(True)

Out[32]:  5

In [33]:  l1
```

```
Out[33]: [10,
          20,
          30,
          40,
          50,
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi']
```

In [34]: `l[:]`

Out[34]: `[10, 20, 30, 40, 50, 10, 10]`

In [35]: `l[2:]`

Out[35]: `[30, 40, 50, 10, 10]`

In [36]: `l[::-1]`

Out[36]: `[10, 10, 50, 40, 30, 20, 10]`

In [37]: `l[:-1]`

Out[37]: `[10, 20, 30, 40, 50, 10]`

In [38]: `l[:::]`

```
Cell In[38], line 1
  l[:::]
     ^
SyntaxError: invalid syntax
```

In [39]: `l`

Out[39]: `[10, 20, 30, 40, 50, 10, 10]`

```
In [40]: l1
```

```
Out[40]: [10,
          20,
          30,
          40,
          50,
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi',
          2.3,
          (2+3j),
          True,
          'hi']
```

```
In [42]: l1.index('hi')
```

```
Out[42]: 8
```

```
In [43]: l1[8]
```

```
Out[43]: 'hi'
```

```
In [44]: l[::2]
```

```
Out[44]: [10, 30, 50, 10]
```

```
In [45]: l[::3]
```

```
Out[45]: [10, 40, 10]
```

```
In [46]: l1[1:10:3]
```

```
Out[46]: [20, 50, True]
```

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```

```
In [ ]:
```