Python Data Structure

- list
- tuple
- set
- dict

In [2]:
```
l = []
l
```

Out[2]:
```
[]
```

In [3]:
```
type(l)
```

Out[3]:
```
list
```

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

Out[4]:
```
0
```

In [7]:
```
l
```

Out[7]:
```
[]
```

In [8]:
```
l.append(10)
```

In [9]:
```
l
```

Out[9]:
```
[10]
```

In [10]:
```
l.append(20)
l
```

Out[10]:
```
[10, 20]
```

In [11]:
```
l.append(30)
l
```

Out[11]:
```
[10, 20, 30]
```

In [12]:
```
l.append(40)
l.append(50)
l.append(60)
```

In [13]:
```
l
```

Out[13]:
```
[10, 20, 30, 40, 50, 60]
```

In [16]:
```
l1 = l.copy()
l1
```

Out[16]: [10, 20, 30, 40, 50, 60]

In [17]:
```
print(l)
print(l1)
```

```
[10, 20, 30, 40, 50, 60]
[10, 20, 30, 40, 50, 60]
```

In [18]:
```
l1.append('hi',1+3j,2.3,True)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[18], line 1
----> 1 l1.append('hi',1+3j,2.3,True)

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

In [19]:
```
l1.append(2.4)
l1.append(True)
l1.append(1+4j)
l1.append('Hi')
```

In [20]:
```
l1
```

Out[20]: [10, 20, 30, 40, 50, 60, 2.4, True, (1+4j), 'Hi']

In [21]:
```
print(len(l))
print(len(l1))
```

```
6
10
```

In [22]:
```
l
```

Out[22]: [10, 20, 30, 40, 50, 60]

In [23]:
```
l.append(10)
```

In [24]:
```
l
```

Out[24]: [10, 20, 30, 40, 50, 60, 10]

In [25]:
```
l3=[1,2,3,4,5,6,7,8,'vamshi','krishna',1+2j, True]
```

In [26]:
```
l3
```

Out[26]: [1, 2, 3, 4, 5, 6, 7, 8, 'vamshi', 'krishna', (1+2j), True]

In [28]:
```
l3.clear()
```

In [29]:
```
l3
```

Out[29]:
```
[]
```

In [30]:
```
del l3  #deletes the variable
```

In [31]:
```
l3
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[31], line 1
----> 1 l3

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

In [32]:
```
l
```

Out[32]:
```
[10, 20, 30, 40, 50, 60, 10]
```

In [33]:
```
l.count()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[33], line 1
----> 1 l.count()

TypeError: list.count() takes exactly one argument (0 given)
```

In [34]:
```
l.count
```

Out[34]:
```
<function list.count(value, /)>
```

In [35]:
```
l.count(10)
```

Out[35]:
```
2
```

In [37]:
```
l.count(20)
```

Out[37]:
```
1
```

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

Out[38]:
```
[10, 20, 30, 40, 50, 60, 10]
```

In [39]:
```
l[:]
```

Out[39]:
```
[10, 20, 30, 40, 50, 60, 10]
```

In [40]:
```
l[2:]
```

Out[40]:
```
[30, 40, 50, 60, 10]
```

In [42]:
```
l[:5]
```

Out[42]: [10, 20, 30, 40, 50]

In [43]:
```
l[:-1]
```

Out[43]: [10, 20, 30, 40, 50, 60]

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

Out[44]: [10, 20, 30, 40, 50, 60, 10]

In [45]:
```
l[::-1]
```

Out[45]: [10, 60, 50, 40, 30, 20, 10]

In [46]:
```
l[:::-1]
```

```
  Cell In[46], line 1
    l[:::-1]
        ^
SyntaxError: invalid syntax
```

In [47]:
```
l1
```

Out[47]: [10, 20, 30, 40, 50, 60, 2.4, True, (1+4j), 'Hi']

In [48]:
```
l1.index('Hi')
```

Out[48]: 9

In [50]:
```
l1[9]
```

Out[50]: 'Hi'

In [51]:
```
l[::1]
```

Out[51]: [10, 20, 30, 40, 50, 60, 10]

In [53]:
```
l[::2]
```

Out[53]: [10, 30, 50, 10]

In [54]:
```
l[::-2]
```

Out[54]: [10, 50, 30, 10]

In [55]:
```
l
```

Out[55]: [10, 20, 30, 40, 50, 60, 10]

In [56]:
```
l1
```

Out[56]: [10, 20, 30, 40, 50, 60, 2.4, True, (1+4j), 'Hi']

In [57]:
```
l1[1:10:3]
```

Out[57]: [20, 50, True]

In [58]:
```
l1.append(100)
```

In [59]:
```
l1
```

Out[59]: [10, 20, 30, 40, 50, 60, 2.4, True, (1+4j), 'Hi', 100]

In [60]:
```
l1[1:10:3]
```

Out[60]: [20, 50, True]

In [61]:
```
l1
```

Out[61]: [10, 20, 30, 40, 50, 60, 2.4, True, (1+4j), 'Hi', 100]

In [62]:
```
l1[1:10:3]
```

Out[62]: [20, 50, True]

In [63]:
```
l1.append(20,50,60)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[63], line 1
----> 1 l1.append(20,50,60)

TypeError: list.append() takes exactly one argument (3 given)
```

In [64]:
```
l1.append(20)
l1.append(50)
l1.append(70)
```

In [65]:
```
l1
```

Out[65]: [10, 20, 30, 40, 50, 60, 2.4, True, (1+4j), 'Hi', 100, 20, 50, 70]

In [67]:
```
l1[1:15:3]
```

Out[67]: [20, 50, True, 100, 70]

In [ ]:
```

```