- List
- Tuple
- Set
- Dict
- Range

LIST

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

Out[2]: []

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

Out[3]: list

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

Out[4]: 0

```
In [5]:  l.append()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[5], line 1
----> 1 l.append()

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

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

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

Out[7]: [10]

```
In [8]:  l.append(20)
         l.append(30)
         l.append(40)
```

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

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

```
In [10]:  len(l)
```

Out[10]: 4

```
In [11]: l.append(50)
```

```
In [12]: l
```

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

```
In [13]: l1 = [10, 3.4, 'ten', True, 1+2j]
         l1
```

```
Out[13]: [10, 3.4, 'ten', True, (1+2j)]
```

```
In [14]: print(l)
         print(l1)
```

```
[10, 20, 30, 40, 50]
[10, 3.4, 'ten', True, (1+2j)]
```

```
In [15]: print(len(l))
         print(len(l1))
```

```
5
5
```

```
In [16]: print(id(l))
         print(id(l1))
```

```
1668793191296
1668794635008
```

```
In [17]: l2
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[17], line 1
----> 1 l2

NameError: name 'l2' is not defined
```

```
In [18]: l2 = l1.copy()
         l2
```

```
Out[18]: [10, 3.4, 'ten', True, (1+2j)]
```

```
In [19]: l1 == l2
```

```
Out[19]: True
```

```
In [20]: l == l2
```

```
Out[20]: False
```

```
In [21]: print(l)
         print(l1)
         print(l2)
```

```
[10, 20, 30, 40, 50]
[10, 3.4, 'ten', True, (1+2j)]
[10, 3.4, 'ten', True, (1+2j)]
```

In [22]: `l != l2`

Out[22]: True

In [23]: `l`

Out[23]: [10, 20, 30, 40, 50]

In [24]: `l[:]`

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

In [25]: `l[0]`

Out[25]: 10

In [26]: `l[-1]`

Out[26]: 50

In [27]: `l`

Out[27]: [10, 20, 30, 40, 50]

In [29]: `l[4]`

Out[29]: 50

In [30]: `l[5]`

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[30], line 1
----> 1 l[5]

IndexError: list index out of range
```

In [28]: `l[10]`

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[28], line 1
----> 1 l[10]

IndexError: list index out of range
```

In [31]: `l`

Out[31]: [10, 20, 30, 40, 50]

```
In [32]:  l[0]
```

```
Out[32]:  10
```

```
In [33]:  l[0] = 100
```

```
In [34]:  l
```

```
Out[34]:  [100, 20, 30, 40, 50]
```

```
In [35]:  l[-1] = 'jan'
```

```
In [36]:  l
```

```
Out[36]:  [100, 20, 30, 40, 'jan']
```

```
In [37]:  l.append('feb')
```

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

```
Out[38]:  [100, 20, 30, 40, 'jan', 'feb']
```

```
In [39]:  l.append(40)
          l
```

```
Out[39]:  [100, 20, 30, 40, 'jan', 'feb', 40]
```

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

```
Out[40]:  [100, 20, 30, 40, 'jan', 'feb', 40]
```

```
In [41]:  l2
```

```
Out[41]:  [10, 3.4, 'ten', True, (1+2j)]
```

```
In [42]:  len(l2)
```

```
Out[42]:  5
```

```
In [43]:  l2.clear()
```

```
In [44]:  l2
```

```
Out[44]:  []
```

```
In [45]:  len(l2)
```

```
Out[45]:  0
```

```
In [46]:  del l2
```

```
In [47]:  l
```

Out[47]: [100, 20, 30, 40, 'jan', 'feb', 40]

```
In [48]:  l.count(100)
```

Out[48]: 1

```
In [49]:  l.count(40)
```

Out[49]: 2

```
In [50]:  l
```

Out[50]: [100, 20, 30, 40, 'jan', 'feb', 40]

```
In [51]:  l.count(1000)
```

Out[51]: 0

```
In [52]:  print(l)
          print(l1)
```

```
[100, 20, 30, 40, 'jan', 'feb', 40]
[10, 3.4, 'ten', True, (1+2j)]
```

```
In [53]:  print(len(l))
          print(len(l1))
```

```
7
5
```

list membership

```
In [54]:  l
```

Out[54]: [100, 20, 30, 40, 'jan', 'feb', 40]

```
In [55]:  100 in l
```

Out[55]: True

```
In [56]:  1000 in l
```

Out[56]: False

```
In [58]:  l
```

Out[58]: [100, 20, 30, 40, 'jan', 'feb', 40]

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

Out[59]: `[10, 3.4, 'ten', True, (1+2j)]`

In [60]:
```python
l2 = []
```

In [61]:
```python
print(len(l))
print(len(l1))
print(len(l2))
```
```
7
5
0
```

In [62]:
```python
l
```

Out[62]: `[100, 20, 30, 40, 'jan', 'feb', 40]`

In [63]:
```python
l1
```

Out[63]: `[10, 3.4, 'ten', True, (1+2j)]`

In [64]:
```python
l2
```

Out[64]: `[]`

In [65]:
```python
l2.extend(l)
```

In [66]:
```python
l2
```

Out[66]: `[100, 20, 30, 40, 'jan', 'feb', 40]`

In [67]:
```python
l2.extend(l1)
```

In [68]:
```python
l2
```

Out[68]: `[100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]`

In [69]:
```python
l1
```

Out[69]: `[10, 3.4, 'ten', True, (1+2j)]`

In [70]:
```python
l1.extend(l2)
```

In [71]:
```python
l1
```

```
Out[71]:  [10,
           3.4,
           'ten',
           True,
           (1+2j),
           100,
           20,
           30,
           40,
           'jan',
           'feb',
           40,
           10,
           3.4,
           'ten',
           True,
           (1+2j)]
```

```
In [73]:  len(l1)
```

Out[73]: 17

```
In [74]:  l
```

Out[74]: [100, 20, 30, 40, 'jan', 'feb', 40]

```
In [75]:  l.index('jan')
```

Out[75]: 4

```
In [76]:  l
```

Out[76]: [100, 20, 30, 40, 'jan', 'feb', 40]

```
In [77]:  l[:]
```

Out[77]: [100, 20, 30, 40, 'jan', 'feb', 40]

```
In [78]:  l2
```

Out[78]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [79]:  l2[:]
```

Out[79]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [80]:  l2[0:6]
```

Out[80]: [100, 20, 30, 40, 'jan', 'feb']

```
In [81]:  l2
```

Out[81]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [82]:  l2[3:10]
```

Out[82]: [40, 'jan', 'feb', 40, 10, 3.4, 'ten']

```
In [83]:  l2
```

Out[83]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [84]:  l2[::2]
```

Out[84]: [100, 30, 'jan', 40, 3.4, True]

```
In [85]:  l2
```

Out[85]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [86]:  l2[::5]
```

Out[86]: [100, 'feb', True]

backwaard indexing & backward slicing

```
In [87]:  l2
```

Out[87]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [88]:  l2[:]
```

Out[88]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [89]:  l2[-5]
```

Out[89]: 10

```
In [90]:  l2
```

Out[90]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [91]:  l2[:-9]
```

Out[91]: [100, 20, 30]

```
In [92]:  l2
```

Out[92]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [93]:  l2[:-3]
```

Out[93]: [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4]

```
In [94]:   l2
```

Out[94]:   [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [95]:   l2[-3:]
```

Out[95]:   ['ten', True, (1+2j)]

```
In [96]:   l2
```

Out[96]:   [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [97]:   l2[3:-3]
```

Out[97]:   [40, 'jan', 'feb', 40, 10, 3.4]

```
In [98]:   l2
```

Out[98]:   [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [99]:   l2[::-1]
```

Out[99]:   [(1+2j), True, 'ten', 3.4, 10, 40, 'feb', 'jan', 40, 30, 20, 100]

```
In [100…   l2
```

Out[100…   [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [101…   l2[:-3]
```

Out[101…   [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4]

```
In [102…   l2
```

Out[102…   [100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]

```
In [103…   l2[::-3]
```

Out[103…   [(1+2j), 3.4, 'feb', 30]

```
In [105…   print(l)
           print(l1)
           print(l2)
```

```
[100, 20, 30, 40, 'jan', 'feb', 40]
[10, 3.4, 'ten', True, (1+2j), 100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', Tr
ue, (1+2j)]
[100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True, (1+2j)]
```

```
In [110…   l1.remove(1+2j)
```

```
In [111…   print(l1)
```

```
[10, 3.4, 'ten', True, 100, 20, 30, 40, 'jan', 'feb', 40, 10, 3.4, 'ten', True]
```

23rd

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]:

In [ ]: