LIST

```
In [ ]:   # List is an ordered sequence of items
          # We can have different data types under a list. Eg: We can have integer,float and
```

```
In [2]:   l=[] # List creation
          l
```

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

```
In [4]:   list1=[] # Empty  list
```

```
In [6]:   print(type(list1))
```

```
          <class 'list'>
```

```
In [10]:  list2=[10,30,60] # List of integer numbers
          list2
```

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

```
In [12]:  list3=[10.77,30.66,60.89] # List of float numbers
          list3
```

```
Out[12]:  [10.77, 30.66, 60.89]
```

```
In [14]:  list4=['one','two','three'] # List of strings
          list4
```

```
Out[14]:  ['one', 'two', 'three']
```

```
In [16]:  list5=['Sri',25,[50,100],[150,90]] # Nested Lists
          list5
```

```
Out[16]:  ['Sri', 25, [50, 100], [150, 90]]
```

```
In [18]:  list6=[100,'Sri',17.765] # List of mixed data types
          list6
```

```
Out[18]:  [100, 'Sri', 17.765]
```

```
In [20]:  list7=['Sri',25,[50,100],[150,90],{'john','david'}]
          list7
```

```
Out[20]:  ['Sri', 25, [50, 100], [150, 90], {'david', 'john'}]
```

```
In [22]:  len(list6) # Length of list
```

```
Out[22]:  3
```

List Indexing

```
In [25]:  list2
```

```
Out[25]:  [10, 30, 60]
```

```
In [27]:  list2[0] # Retrive the first element of list
```

```
Out[27]:  10
```

```
In [29]:  list2[0:]
```

```
Out[29]:  [10, 30, 60]
```

```
In [31]:  list2.append(90)
          list2.append(120)
          list2.append(150)
          list2
```

```
Out[31]:  [10, 30, 60, 90, 120, 150]
```

```
In [33]:  list2[:]
```

```
Out[33]:  [10, 30, 60, 90, 120, 150]
```

```
In [35]:  len(list2)
```

```
Out[35]:  6
```

```
In [37]:  list2[:4]
```

```
Out[37]:  [10, 30, 60, 90]
```

```
In [39]:  list[:-1]
```

```
Out[39]:  list[slice(None, -1, None)]
```

```
In [41]:  list4[0]
```

```
Out[41]:  'one'
```

```
In [43]:  list5[2][1]
```

```
Out[43]:  100
```

```
In [45]:  list4[-1]
```

```
Out[45]:  'three'
```

```
In [47]:  list5[-1]
```

Out[47]:   [150, 90]

In [49]:   `list2[::-1]`

Out[49]:   [150, 120, 90, 60, 30, 10]

List Slicing

In [54]:   `mylist=['one','two','three','four','five','six','seven','eight']`

In [56]:   `mylist`

Out[56]:   ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']

In [58]:   `mylist[0:3] # Return all items from 0th to 3rd index location excluding the item`

Out[58]:   ['one', 'two', 'three']

In [60]:   `mylist[2:5] # Return all items from 2nd to 5th index location excluding the item`

Out[60]:   ['three', 'four', 'five']

In [62]:   `mylist[:3] # Return first three items`

Out[62]:   ['one', 'two', 'three']

In [64]:   `mylist[:2] # Return first two items`

Out[64]:   ['one', 'two']

In [66]:   `mylist[-3:] # Return last three items`

Out[66]:   ['six', 'seven', 'eight']

In [68]:   `mylist[-2:] # Return last two items`

Out[68]:   ['seven', 'eight']

In [70]:   `mylist[-1] # Return last item of the list`

Out[70]:   'eight'

In [72]:   `mylist[:] # Return whole first`

Out[72]:   ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']

Add,Remove & Change Items

In [75]: `mylist`

Out[75]: `['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight']`

In [79]:
```python
mylist.append('nine')
mylist
```

Out[79]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'nine']
```

In [81]:
```python
mylist.insert(9,'ten')
mylist
```

Out[81]:
```
['one',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten',
 'nine']
```

In [83]:
```python
mylist.insert(1,'ONE')
mylist
```

Out[83]:
```
['one',
 'ONE',
 'two',
 'three',
 'four',
 'five',
 'six',
 'seven',
 'eight',
 'nine',
 'ten',
 'nine']
```

In [85]:
```python
mylist.remove('ONE') #Remove item "ONE"
mylist
```

```
Out[85]:  ['one',
           'two',
           'three',
           'four',
           'five',
           'six',
           'seven',
           'eight',
           'nine',
           'ten',
           'nine']
```

```python
In [87]: mylist.pop() # Remove last item of the list
         mylist
```

```
Out[87]:  ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine', 'ten']
```

```python
In [89]: mylist.pop(8) # Remove item at index location 8
         mylist
```

```
Out[89]:  ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'ten']
```

```python
In [91]: del mylist[7]
         mylist
```

```
Out[91]:  ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'ten']
```

```python
In [93]: # Change value of the string
         mylist[0]=1
         mylist[1]=2
         mylist[2]=3
         mylist
```

```
Out[93]:  [1, 2, 3, 'four', 'five', 'six', 'seven', 'ten']
```

```python
In [95]: mylist.clear() # Empty List/ Delete all items in the list
         mylist
```

```
Out[95]:  []
```

```python
In [97]: del mylist
         mylist
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[97], line 2
      1 del mylist
----> 2 mylist

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

Copy List

```
In [100… mylist=['one','two','three','four','five','six','seven','eight','nine']
```

```
In [102… mylist1= mylist
```

```
In [104… id(mylist),id(mylist1)
```

Out[104…   (2363265502272, 2363265502272)

```
In [106… mylist2=mylist.copy()
```

```
In [108… id(mylist2)
```

Out[108…   2363211380928

```
In [110… mylist[0]=1
```

```
In [112… mylist
```

Out[112…   [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

```
In [114… mylist1
```

Out[114…   [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']

```
In [116… mylist2
```

Out[116…   ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']