In [1]:
```
#A.Appending a new element to a list:
```

In [2]:
```
#Example-01:
```

In [3]:
```
l1 = [10,True,6.5,'Tiger',9-7j]
l1
```

Out[3]:
```
[10, True, 6.5, 'Tiger', (9-7j)]
```

In [4]:
```
l1.append("Hello")
l1
```

Out[4]:
```
[10, True, 6.5, 'Tiger', (9-7j), 'Hello']
```

In [5]:
```
#Note: Append function takes only one argument.
```

In [6]:
```
#Example-02:
```

In [7]:
```
l2 = [12,23,90,45]
l2
```

Out[7]:
```
[12, 23, 90, 45]
```

In [8]:
```
l2.append("Obama")
l2
```

Out[8]:
```
[12, 23, 90, 45, 'Obama']
```

In [9]:
```
#Example-03:
```

In [10]:
```
l3 = ["r","F",'California',"Texas","USA is a beautiful country."]
l3
```

Out[10]: ['r', 'F', 'California', 'Texas', 'USA is a beautiful country.']

In [11]:
```
l3.append(900)
l3
```

Out[11]: ['r', 'F', 'California', 'Texas', 'USA is a beautiful country.', 900]

In [12]:
```
l3.append("*")
l3
```

Out[12]: ['r', 'F', 'California', 'Texas', 'USA is a beautiful country.', 900, '*']

In [13]:
```
#B.Popping out an element from a list:
```

In [14]:
```
#Example-01:
```

In [15]:
```
l1
```

Out[15]: [10, True, 6.5, 'Tiger', (9-7j), 'Hello']

In [16]:
```
l1.pop()
l1
```

Out[16]: [10, True, 6.5, 'Tiger', (9-7j)]

In [17]:
```
l1.pop()
l1
```

Out[17]: [10, True, 6.5, 'Tiger']

In [18]:
```
l1.pop(1)
l1
```

Out[18]: [10, 6.5, 'Tiger']

In [19]:
```
l1.pop(2)
```

```
In [ ]: l1
Out[19]: [10, 6.5]

In [20]: #Example-02:

In [21]: l2
Out[21]: [12, 23, 90, 45, 'Obama']

In [22]: l2.pop(-2)
Out[22]: 45

In [23]: l2
Out[23]: [12, 23, 90, 'Obama']

In [24]: l2.pop(-1)
Out[24]: 'Obama'

In [25]: l2
Out[25]: [12, 23, 90]

In [26]: l2.pop(1)
Out[26]: 23

In [27]: l2
Out[27]: [12, 90]

In [28]: #Example-03:

In [ ]:
```

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

Out[29]:
```
['r', 'F', 'California', 'Texas', 'USA is a beautiful country.', 900,
'*']
```

In [30]:
```
l3.pop(-3)
```

Out[30]:
```
'USA is a beautiful country.'
```

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

Out[31]:
```
['r', 'F', 'California', 'Texas', 900, '*']
```

In [32]:
```
#C.Reversing elements of a list:-
```

In [33]:
```
#Example-01:
```

In [34]:
```
l1
```

Out[34]:
```
[10, 6.5]
```

In [35]:
```
l1.reverse()
l1
```

Out[35]:
```
[6.5, 10]
```

In [36]:
```
l1[::-1]
```

Out[36]:
```
[10, 6.5]
```

In [37]:
```
#Example-02:
```

In [38]:
```
l2
```

Out[38]:
```
[12, 90]
```

In [39]:
```
l2.reverse()
```

In [40]:
```
l2
```

Out[40]:
```
[90, 12]
```

In [41]:
```
l2[::-1]
```

Out[41]:
```
[12, 90]
```

In [42]:
```
#Example-03:
```

In [43]:
```
l3
```

Out[43]:
```
['r', 'F', 'California', 'Texas', 900, '*']
```

In [44]:
```
l3.reverse()
l3
```

Out[44]:
```
['*', 900, 'Texas', 'California', 'F', 'r']
```

In [45]:
```
l3[::-1]
```

Out[45]:
```
['r', 'F', 'California', 'Texas', 900, '*']
```

In [46]:
```
l3.reverse()
l3
```

Out[46]:
```
['r', 'F', 'California', 'Texas', 900, '*']
```

In [47]:
```
l3.reverse()
l3
```

Out[47]:
```
['*', 900, 'Texas', 'California', 'F', 'r']
```

In [48]:
```
#D.Inserting an element in a list:-
```

In [49]:
```
#Example-01:
```

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

Out[50]:
```
[6.5, 10]
```

In [51]:
```
l1.insert(0,789)
l1
```

Out[51]:
```
[789, 6.5, 10]
```

In [52]:
```
l1.insert(-1,"Hello")
l1
```

Out[52]:
```
[789, 6.5, 'Hello', 10]
```

In [53]:
```
l1.insert(1,"X")
l1
```

Out[53]:
```
[789, 'X', 6.5, 'Hello', 10]
```

In [54]:
```
l1.insert(3,9-4j)
l1
```

Out[54]:
```
[789, 'X', 6.5, (9-4j), 'Hello', 10]
```

In [55]:
```
#Example-02:
```

In [56]:
```
l2
```

Out[56]:
```
[90, 12]
```

In [57]:
```
l2.insert(3,'Mango')
l2
```

Out[57]:
```
[90, 12, 'Mango']
```

In [58]:
```
l2.insert(-1,-32+6j)
l2
```

Out[58]:
```
[90, 12, (-32+6j), 'Mango']
```

In [59]:
```
l2.insert(1,"T")
l2
```

Out[59]:
```
[90, 'T', 12, (-32+6j), 'Mango']
```

In [60]:
```
l2.insert(-2,'*')
l2
```

Out[60]:
```
[90, 'T', 12, '*', (-32+6j), 'Mango']
```

In [61]:
```
#Example-03:
```

In [62]:
```
l3
```

Out[62]:
```
['*', 900, 'Texas', 'California', 'F', 'r']
```

In [63]:
```
l3.insert(-1,"USA is a beautiful country.")
l3
```

Out[63]:
```
['*', 900, 'Texas', 'California', 'F', 'USA is a beautiful country.',
'r']
```

In [64]:
```
l3.insert(2,7j)
l3
```

Out[64]:
```
['*', 900, 7j, 'Texas', 'California', 'F', 'USA is a beautiful countr
y.', 'r']
```

In [65]:
```
#E.Sorting elements of a list:-
```

In [66]:
```
#Example-01:
```

In [67]:
```
l4 = ['Mango',"Orange","Apple","Grapes",'Banana']
l4
```

Out[67]:
```
['Mango', 'Orange', 'Apple', 'Grapes', 'Banana']
```

In [68]:
```
l4.sort()
l4
```

Out[68]:
```
['Apple', 'Banana', 'Grapes', 'Mango', 'Orange']
```

In [69]:
```
#Example-02:
```

In [70]:
```
l5 = ["TIGER",'Cow',"Tiger",'''ZEBRA''','Lion',"""Bucket""",'''Chair'''
,"Zebra","bAG","Bag","BAG"]
l5
```

Out[70]:
```
['TIGER',
 'Cow',
 'Tiger',
 'ZEBRA',
 'Lion',
 'Bucket',
 'Chair',
 'Zebra',
 'bAG',
 'Bag',
 'BAG']
```

In [71]:
```
l5.sort()
l5
```

Out[71]:
```
['BAG',
 'Bag',
 'Bucket',
 'Chair',
 'Cow',
 'Lion',
 'TIGER',
```

```
 'Tiger',
 'ZEBRA',
 'Zebra',
 'bAG']
```

In [72]:
```
#Example-03:
```

In [73]:
```
l6 = ["Pen","PEN",'pEN',"pen","pEn","PeN"]
l6
```

Out[73]:
```
['Pen', 'PEN', 'pEN', 'pen', 'pEn', 'PeN']
```

In [74]:
```
l6.sort()
l6
```

Out[74]:
```
['PEN', 'PeN', 'Pen', 'pEN', 'pEn', 'pen']
```

In [75]:
```
#F.Concatenating tuples:
```

In [76]:
```
#Example-01:
```

In [77]:
```
l1
```

Out[77]:
```
[789, 'X', 6.5, (9-4j), 'Hello', 10]
```

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

Out[78]:
```
[90, 'T', 12, '*', (-32+6j), 'Mango']
```

In [79]:
```
l1+l2
```

Out[79]:
```
[789, 'X', 6.5, (9-4j), 'Hello', 10, 90, 'T', 12, '*', (-32+6j), 'Mang
o']
```

In [80]:
```
l2+l1
```

Out[80]:
```
[90, 'T', 12, '*', (-32+6j), 'Mango', 789, 'X', 6.5, (9-4j), 'Hello', 1
```

```
0]
```

In [81]:
```
#Example-02:
```

In [82]:
```
l7 = [1,2,3]
l8 = ['a','b','c','d']
l9 = ["A","B","C"]
l10 = [True,False,"City","Village"]
```

In [83]:
```
l7,l8,l9,l10
```

Out[83]:
```
([1, 2, 3],
 ['a', 'b', 'c', 'd'],
 ['A', 'B', 'C'],
 [True, False, 'City', 'Village'])
```

In [84]:
```
l7+l9
```

Out[84]:
```
[1, 2, 3, 'A', 'B', 'C']
```

In [85]:
```
l8+l10
```

Out[85]:
```
['a', 'b', 'c', 'd', True, False, 'City', 'Village']
```

In [86]:
```
l7+l8+l9+l10
```

Out[86]:
```
[1, 2, 3, 'a', 'b', 'c', 'd', 'A', 'B', 'C', True, False, 'City', 'Vill
age']
```

In [87]:
```
#Example-03:
```

In [88]:
```
l11 = ["@","#","&"]
l12 = [1.2,3.7,9.1,5.8]
l13 = [-2j,3-5j,7+8j]
l14 = ['x','y','A']
```

In [89]:
```
l11,l12,l13,l14
```

Out[89]:
```
(['@', '#', '&'],
 [1.2, 3.7, 9.1, 5.8],
 [(-0-2j), (3-5j), (7+8j)],
 ['x', 'y', 'A'])
```

In [90]:
```
l11+l12+l13
```

Out[90]:
```
['@', '#', '&', 1.2, 3.7, 9.1, 5.8, (-0-2j), (3-5j), (7+8j)]
```

In [91]:
```
l12+l13+l14
```

Out[91]:
```
[1.2, 3.7, 9.1, 5.8, (-0-2j), (3-5j), (7+8j), 'x', 'y', 'A']
```

In [92]:
```
l11+l12+l13+l14
```

Out[92]:
```
['@', '#', '&', 1.2, 3.7, 9.1, 5.8, (-0-2j), (3-5j), (7+8j), 'x', 'y',
'A']
```

In [93]:
```
l14+l11+l13+l12
```

Out[93]:
```
['x', 'y', 'A', '@', '#', '&', (-0-2j), (3-5j), (7+8j), 1.2, 3.7, 9.1,
5.8]
```

In [94]:
```
#G.Repeating elements of tuples:-
```

In [95]:
```
#Example-01:
```

In [96]:
```
l7
```

Out[96]:
```
[1, 2, 3]
```

In [97]:
```
l7*2
```

Out[97]:
```
[1, 2, 3, 1, 2, 3]
```

```
In [98]: l8
Out[98]: ['a', 'b', 'c', 'd']

In [99]: l8*3
Out[99]: ['a', 'b', 'c', 'd', 'a', 'b', 'c', 'd', 'a', 'b', 'c', 'd']

In [100]: l9
Out[100]: ['A', 'B', 'C']

In [101]: l9*4
Out[101]: ['A', 'B', 'C', 'A', 'B', 'C', 'A', 'B', 'C', 'A', 'B', 'C']

In [102]: #Example-02:

In [103]: l10
Out[103]: [True, False, 'City', 'Village']

In [104]: l10*5
Out[104]: [True,
           False,
           'City',
           'Village',
           True,
           False,
           'City',
           'Village',
           True,
           False,
           'City',
           'Village',
           True,
           False,
```

```
 'City',
 'Village',
 True,
 False,
 'City',
 'Village']
```

In [105]:
```
l11
```

Out[105]:
```
['@', '#', '&']
```

In [106]:
```
l11*5
```

Out[106]:
```
['@', '#', '&', '@', '#', '&', '@', '#', '&', '@', '#', '&', '@', '#',
'&']
```

In [107]:
```
l12
```

Out[107]:
```
[1.2, 3.7, 9.1, 5.8]
```

In [108]:
```
l12*3
```

Out[108]:
```
[1.2, 3.7, 9.1, 5.8, 1.2, 3.7, 9.1, 5.8, 1.2, 3.7, 9.1, 5.8]
```

In [109]:
```
l13
```

Out[109]:
```
[(-0-2j), (3-5j), (7+8j)]
```

In [110]:
```
l13*2
```

Out[110]:
```
[(-0-2j), (3-5j), (7+8j), (-0-2j), (3-5j), (7+8j)]
```

In [111]:
```
l14
```

Out[111]:
```
['x', 'y', 'A']
```

In [112]:
```
l14*5
```

```
Out[112]: ['x', 'y', 'A', 'x', 'y', 'A', 'x', 'y', 'A', 'x', 'y', 'A', 'x', 'y',
          'A']
```

```
In [113]: #Example-03:
```

```
In [114]: l1
```

```
Out[114]: [789, 'X', 6.5, (9-4j), 'Hello', 10]
```

```
In [115]: l1*2
```

```
Out[115]: [789, 'X', 6.5, (9-4j), 'Hello', 10, 789, 'X', 6.5, (9-4j), 'Hello', 1
          0]
```

```
In [116]: l2
```

```
Out[116]: [90, 'T', 12, '*', (-32+6j), 'Mango']
```

```
In [117]: l2*3
```

```
Out[117]: [90,
           'T',
           12,
           '*',
           (-32+6j),
           'Mango',
           90,
           'T',
           12,
           '*',
           (-32+6j),
           'Mango',
           90,
           'T',
           12,
           '*',
           (-32+6j),
           'Mango']
```

In [118]:
```
l3
```

Out[118]:
```
['*', 900, 7j, 'Texas', 'California', 'F', 'USA is a beautiful countr
y.', 'r']
```

In [119]:
```
l3*2
```

Out[119]:
```
['*',
 900,
 7j,
 'Texas',
 'California',
 'F',
 'USA is a beautiful country.',
 'r',
 '*',
 900,
 7j,
 'Texas',
 'California',
 'F',
 'USA is a beautiful country.',
 'r']
```

In [120]:
```
#H.Repeating & concatenating tuples:
```

In [121]:
```
#Example-01:
```

In [122]:
```
l11
```

Out[122]:
```
['@', '#', '&']
```

In [123]:
```
l12
```

Out[123]:
```
[1.2, 3.7, 9.1, 5.8]
```

```
In [124]: l11*2+l12
Out[124]: ['@', '#', '&', '@', '#', '&', 1.2, 3.7, 9.1, 5.8]

In [125]: #Example-02:

In [126]: l7
Out[126]: [1, 2, 3]

In [127]: l8
Out[127]: ['a', 'b', 'c', 'd']

In [128]: l9
Out[128]: ['A', 'B', 'C']

In [129]: l7*2+l8+l9*2
Out[129]: [1, 2, 3, 1, 2, 3, 'a', 'b', 'c', 'd', 'A', 'B', 'C', 'A', 'B', 'C']

In [130]: #Example-03:

In [131]: l1
Out[131]: [789, 'X', 6.5, (9-4j), 'Hello', 10]

In [132]: l9
Out[132]: ['A', 'B', 'C']

In [133]: l14
Out[133]: ['x', 'y', 'A']

In [ ]:
```

In [134]:
```
l1+l9*2+l14
```

Out[134]:
```
[789,
 'X',
 6.5,
 (9-4j),
 'Hello',
 10,
 'A',
 'B',
 'C',
 'A',
 'B',
 'C',
 'x',
 'y',
 'A']
```