List

- It is a sequence and collection of different data types
- It is mutable

[ ]

```
In [1]: text1 = 'A B C D E F'
        text2 = 'ABCDEF'
```

```
In [2]: # string to list
        text1.split()
```

```
Out[2]: ['A', 'B', 'C', 'D', 'E', 'F']
```

```
In [3]: text2.split()
```

```
Out[3]: ['ABCDEF']
```

```
In [4]: text2.split('C')
```

```
Out[4]: ['AB', 'DEF']
```

list

```
In [6]: text2
```

```
Out[6]: 'ABCDEF'
```

```
In [5]: list(text2)
```

```
Out[5]: ['A', 'B', 'C', 'D', 'E', 'F']
```

```
In [8]: text1
```

```
Out[8]: 'A B C D E F'
```

```
In [9]: list(text1)
```

```
Out[9]: ['A', ' ', 'B', ' ', 'C', ' ', 'D', ' ', 'E', ' ', 'F']
```

```
In [10]:  # [ ]
          my_list = ['Innomatics','Technology','Hub',1,2,3,5.5,True,False]
          my_list
```

Out[10]: ['Innomatics', 'Technology', 'Hub', 1, 2, 3, 5.5, True, False]

Indexing

- print 1st element
- print last element
- print 1st three elements
- print last three elements
- print alternate elements starting with Innomatics
- print alternate elements starting with Technology
- print my_list reverse order

```
In [15]: # 1st element
         print('='*20)
         print('1st element: ',my_list[0])
         print('='*20)
         # last element
         print('='*20)
         print('last element: ',my_list[-1])
         print('='*20)
         # 1st three elements
         print('='*20)
         print('1st three elements: ',my_list[0:3]) # :3 , :3:1, 0:3:1
         print('='*20)
         # last three elements
         print('='*20)
         print('last three elements: ',my_list[-3:]) #
         print('='*20)
         # alternate elements
         print('='*20)
         print('alternate elements: {}'.format(my_list[0::2])) # ::2, 0:len(my_list):2
         print('='*20)
         # alternate elements
         print('='*20)
         print('alternate elements technology: %s'% my_list[1::2]) #
         print('='*20)
         # Reverse order
         print('='*20)
         print('Reverse order: %s'% my_list[::-1]) #
         print('='*20)
```

```
====================
1st element:  Innomatics
====================
====================
last element:  False
====================
====================
1st three elements:  ['Innomatics', 'Technology', 'Hub']
====================
====================
last three elements:  [5.5, True, False]
====================
====================
alternate elements: ['Innomatics', 'Hub', 2, 5.5, False]
====================
====================
alternate elements technology: ['Technology', 1, 3, True]
====================
====================
Reverse order: [False, True, 5.5, 3, 2, 1, 'Hub', 'Technology', 'Innomatics']
====================
```

Methods

```
In [16]:  # Create a list 'Name' , 'Place', 'Location' , 'Time'
          details = ['Name','Place','Location','Time']
          details
```

Out[16]: ['Name', 'Place', 'Location', 'Time']

append : joining


```
In [17]:  # method 1 for appending
          details.append('Srikanth')
          details
```

Out[17]: ['Name', 'Place', 'Location', 'Time', 'Srikanth']


```
In [22]:  # Method2 '+'
          # appeding place using +
          details_1 = details + ['Hyd']
```

```
In [24]:  details
```

Out[24]: ['Name', 'Place', 'Location', 'Time', 'Srikanth']

**Note: L.append() it will take only one argument or object or element*


```
In [29]:  # using append method, concatenate place location and Time
          details.append(['Hyderabad','Nizampet'])
```

```
In [30]:  details
```

Out[30]: ['Name',
           'Place',
           'Location',
           'Time',
           'Srikanth',
           ['Hyderabad', 'Nizampet'],
           ['Hyderabad', 'Nizampet']]


```
In [32]:  app = ['Hyderabad','Nizampet']
          for i in app:
              details.append(i)
          print(details)
```

['Name', 'Place', 'Location', 'Time', 'Srikanth', ['Hyderabad', 'Nizampet'],
['Hyderabad', 'Nizampet'], 'Hyderabad', 'Nizampet']

```
In [33]: details.extend(['Hyderabad','Nizampet'])
         print(details)
```

```
['Name', 'Place', 'Location', 'Time', 'Srikanth', ['Hyderabad', 'Nizampet'],
['Hyderabad', 'Nizampet'], 'Hyderabad', 'Nizampet', 'Hyderabad', 'Nizampet']
```

```
In [34]: #
         details.append('11.30')
         print(details)
```

```
['Name', 'Place', 'Location', 'Time', 'Srikanth', ['Hyderabad', 'Nizampet'],
['Hyderabad', 'Nizampet'], 'Hyderabad', 'Nizampet', 'Hyderabad', 'Nizampet', '1
1.30']
```

```
In [37]: #
         details.count('Hyderabad')
```

Out[37]: 2

```
In [44]: details.index('Hyderabad',8)
```

Out[44]: 9

```
In [45]: # pop last in first out
         details.pop()# will remove last element
```

Out[45]: '11.30'

```
In [48]: print(details)
```

```
['Name', 'Place', 'Location', 'Time', 'Srikanth', ['Hyderabad', 'Nizampet'],
['Hyderabad', 'Nizampet'], 'Hyderabad', 'Nizampet', 'Hyderabad', 'Nizampet']
```

```
In [49]: details.pop(5)# will remove last element
```

Out[49]: ['Hyderabad', 'Nizampet']

```
In [50]: print(details)
```

```
['Name', 'Place', 'Location', 'Time', 'Srikanth', ['Hyderabad', 'Nizampet'], 'H
yderabad', 'Nizampet', 'Hyderabad', 'Nizampet']
```

```
In [51]: # remove
         details.remove('Hyderabad')
         print(details)
```

```
['Name', 'Place', 'Location', 'Time', 'Srikanth', ['Hyderabad', 'Nizampet'], 'N
izampet', 'Hyderabad', 'Nizampet']
```

In [52]:
```python
# insert
details.insert(4,'11.40')
print(details)
```

```
['Name', 'Place', 'Location', 'Time', '11.40', 'Srikanth', ['Hyderabad', 'Nizam
pet'], 'Nizampet', 'Hyderabad', 'Nizampet']
```

In [57]:
```python
print(details)
```

```
['Name', 'Place', 'Location', 'Time', '11.40', 'Srikanth', 'Nizampet', 'Hyderab
ad', 'Nizampet']
```

In [ ]:
```python
# make use of above details list , write a program to insert
# your name after 'Name' , place after 'Place' and so on
```

In [ ]: