```
In [ ]:  # In operator:For loop
         # index-for loop
         # Mutability check
         # Slicing
         # Concatenation


         # Postive index
         # Negative index
         # Both pos and neg
```

In operator : For loop

```
In [15]:  l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],[2,3,5,-9.5]]
          10.2 in l1
```

Out[15]: True

```
In [10]:  l1=['shruthi']
          'shruthi' in l1
```

Out[10]: True

```
In [13]:  l1=[10,20,'Shruthi',10.2,False,7+8j,True,[]]
          200 not in l1
```

Out[13]: True

```
In [16]:  for i in l1:
              print(i)
```

```
10
20
Shruthi
10.2
False
(7+8j)
True
[]
[2, 3, 5, -9.5]
```

```
In [ ]:  # Mutability check
         # Slicing
         # Concatenation


         # Postive index
         # Negative index
         # Both pos and neg
```

index-for loop

```
In [37]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         l1[9]
```

```
Out[37]: [2, 3, 5, -9.5]
```

```
In [32]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         l1[5],l1[-3],l1[-7],l1[-8],l1[-10],l1[-2],l1[6]
```

```
Out[32]: ((7+8j), [], 10.2, 'Shruthi', 10, 2, True)
```

```
In [36]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         for i in range(10):
             print(l1[i])
```

```
10
20
Shruthi
10.2
False
(7+8j)
True
[]
2
[2, 3, 5, -9.5]
```

```
In [43]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         for i in range(len(l1)):

             print(f"The postive index of {l1[i]} is {i}")
```

```
The postive index of 10 is 0
The postive index of 20 is 1
The postive index of Shruthi is 2
The postive index of 10.2 is 3
The postive index of False is 4
The postive index of (7+8j) is 5
The postive index of True is 6
The postive index of [] is 7
The postive index of 2 is 8
The postive index of [2, 3, 5, -9.5] is 9
```

```
In [42]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         for i in range(len(l1)):

             print(f"the negative index of {l1[i]} is {i-len(l1)}")
```

```
the negative index of 10 is -10
the negative index of 20 is -9
the negative index of Shruthi is -8
the negative index of 10.2 is -7
the negative index of False is -6
the negative index of (7+8j) is -5
the negative index of True is -4
the negative index of [] is -3
the negative index of 2 is -2
the negative index of [2, 3, 5, -9.5] is -1
```

Mutability check

```
In [48]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         l1[6]='va$anth'
         l1
```

Out[48]: [10, 20, 'Shruthi', 10.2, False, (7+8j), 'va$anth', [], 2, [2, 3, 5, -9.5]]

```
In [51]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,[],2,[2,3,5,-9.5]]
         l1[9][2]=9+10j
         l1
```

Out[51]: [10, 20, 'Shruthi', 10.2, False, (7+8j), True, [], 2, [2, 3, (9+10j), -9.5]]

-lists are mutable i.e..we can add element into the list by using its index

Slicing

```
In [64]: l1=[10,20,'Shruthi',10.2,False,7+8j,True,2,[2,3,5,-9.5]]
         l1[::]
```

Out[64]: [10, 20, 'Shruthi', 10.2, False, (7+8j), True, 2, [2, 3, 5, -9.5]]

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

Out[65]: [10, 20, 'Shruthi', 10.2, False, (7+8j), True, 2, [2, 3, 5, -9.5]]

```
In [66]: l1[::-1]
```

Out[66]: [[2, 3, 5, -9.5], 2, True, (7+8j), False, 10.2, 'Shruthi', 20, 10]

```
In [67]: l1[2:]
```

Out[67]: ['Shruthi', 10.2, False, (7+8j), True, 2, [2, 3, 5, -9.5]]

```
In [68]: l1[-5:2:-1]
```

Out[68]: [False, 10.2]

```
In [69]: l1[-10:-5:2]
```

Out[69]: [10, 'Shruthi']

```
In [70]: l1[9:-10:1]
```

Out[70]: []

```
In [71]: l1[-9:6:-2]
```

Out[71]: []

In [74]: `l1[-9:-5:3]`

Out[74]: `[10, 10.2]`

Concatenation

In [76]:
```python
l1=[10,20,'Shruthi',10.2,False,7+8j,True,2,[2,3,5,-9.5]]
l2=[1,2,[3,[4,[5,['Apple']]]]]
l3=l1+l2
print(l3,end=' ')
```

```
[10, 20, 'Shruthi', 10.2, False, (7+8j), True, 2, [2, 3, 5, -9.5], 1, 2, [3, [4, [5,
['Apple']]]]]
```

In [82]:
```python
l1=[10,20,'Shruthi',10.2,False,7+8j,True,2,[2,3,5,-9.5]]
l2=[1,2,[3,[4,[5,['Apple']]]]]
l1+l2
```

Out[82]:
```
[10,
 20,
 'Shruthi',
 10.2,
 False,
 (7+8j),
 True,
 2,
 [2, 3, 5, -9.5],
 1,
 2,
 [3, [4, [5, ['Apple']]]]]
```

In [ ]: