```
list4=['one','two','three']
list4
```

```
['one', 'two', 'three']
```

```
list5=['Asif',50,[25,100],[150,90]]
```

```
list5
```

```
['Asif', 50, [25, 100], [150, 90]]
```

```
ist6=[100,'Asif',17.765]
list6
```

```
[100, 'Asif', 17.765]
```

```
len(list6)
```

```
3
```

```
list6[0]
```

```
100
```

```
list4[0][0]
```

```
'o'
```

```
list6[-1]
```

```
17.765
```

```
list6[-4]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
<ipython-input-36-4aa9c3baf7fc> in <cell line: 0>()
----> 1 list6[-4]

IndexError: list index out of range
```

Next steps: Explain error

```
#List slicing
mylist=['one','two','three','four']
```

```
mylist[0:3]
```

```
['one', 'two', 'three']
```

```
mylist[2:4]
```

```
['three', 'four']
```

```
mylist[:-1]
```

```
['one', 'two', 'three']
```

```
mylist[3:]
```

```
['four']
```

```
mylist[-2:]    #last two elements
```

```
['three', 'four']
```

```
mylist[:]# returns all elements
```

```
['one', 'two', 'three', 'four']
```

```
mylist.append('five')
mylist
```

```
['one', 'two', 'three', 'four', 'five', 'five', 'five']
```

Start coding or generate with AI.

```
mylist.insert(4,'hai')
mylist.insert(6,'hai')

mylist
```

```
['one', 'two', 'three', 'four', 'hai', 'five', 'hai', 'five', 'five']
```

```
mylist.remove('hai')
mylist
```

```
['one', 'two', 'three', 'four', 'five', 'hai', 'five', 'five']
```

```
mylist.remove('hai')
mylist
```

```
['one', 'two', 'three', 'four', 'five', 'five', 'five']
```

```
mylist.pop()#removes last item
```

```
'five'
```

```
mylist.pop(6)#removes  item at index 8
```

```
'five'
```

```
del mylist[4]
mylist
```

```
['one', 'two', 'three', 'four']
```

```
mylist[0]=1
mylist[1]=2


mylist[2]=3
mylist
```

```
[1, 2, 3, 'four']
```

Start coding or generate with AI.

```
mylist.clear()
mylist
```

```
[]
```

```
del mylist
mylist
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-48-e3998fd6e4af> in <cell line: 0>()
      1 del mylist
----> 2 mylist

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

Next steps: Explain error

```
mylist = ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine']
mylist1 = mylist # Create a new reference "mylist1"
id(mylist) , id(mylist1) # The address of both mylist & mylist1 will be the same
```

```
(134273283692352, 134273283692352)
```

Start coding or generate with AI.

```
mylist2 = mylist.copy()
id(mylist) , id(mylist2)
```

```
(134273284206080, 134273299589632)
```

```
mylist[0] = 1
mylist ,mylist1,mylist2  #no impact on mylist2
```

```
([1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine'],
 [1, 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine'],
 ['one', 'two', 'three', 'four', 'five', 'six', 'seven', 'eight', 'nine'])
```

```
list1 = ['one', 'two', 'three', 'four']
list2 = ['five', 'six', 'seven', 'eight']
list3 = list1 + list2 # Join two lists by '+'
```

```
list3
```

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

```
list1.extend(list2)
list1
```

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

```
'one' in list1 # Check if 'one' exist in the list
```

```
True
```

```
'ten' in list1 # Check
```

```
False
```

Start coding or generate with AI.

```
if 'two' in list1:
      print('two is present in the list')
else:
     print('two is not present in the list')
```

```
two is present in the list
```

```
mylist1=[3,2,4,5]
mylist1.reverse()
mylist1
```

```
[5, 4, 2, 3]
```

```
mylist1.sort()
mylist1
```

```
[2, 3, 4, 5]
```

```
mylist1.sort(reverse=True)
mylist1
```

```
[5, 4, 3, 2]
```

```
mylist4 = [88,65,33,21,11,98]
sorted(mylist4) ,mylist4
```

```
([11, 21, 33, 65, 88, 98], [88, 65, 33, 21, 11, 98])
```

```
for i in list1: print(i)
```

```
one
two
three
four
five
six
seven
eight
five
six
seven
eight
```

```
for i in enumerate(list1): print(i)
```

```
(0, 'one')
(1, 'two')
(2, 'three')
(3, 'four')
(4, 'five')
(5, 'six')
(6, 'seven')
(7, 'eight')
(8, 'five')
(9, 'six')
(10, 'seven')
(11, 'eight')
```

```
list10 =['one', 'two', 'three', 'four', 'one', 'one', 'two', 'three']
list10
```

```
['one', 'two', 'three', 'four', 'one', 'one', 'two', 'three']
```

```
list10.count('one')
```

```
3
```

```
L1 = [1,2,3,4,0]
all(L1)
```

```
False
```

```
L1 = [6,0,0,0]
any(L1)
```

```
True
```

```
L2 = [1,2,3,4,True,False]
all(L2) # Returns false
```

```
False
```

```
L3 = [1,2,3,True]
all(L3) # Will return True
```

```
True
```

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