In [104…
```
str = '  ana n tha   '
str
```

Out[104…
```
'  ana n tha   '
```

In [105…
```
str.lstrip()
```

Out[105…
```
'ana n tha   '
```

In [106…
```
str.strip()
```

Out[106…
```
'ana n tha'
```

In [107…
```
s = '"PYTHON" is one of the programming languages'
s
```

Out[107…
```
'"PYTHON" is one of the programming languages'
```

In [145…
```
s1 = " The "PYTHON" is one of the programming languages"
s1
```

```
  Cell In[145], line 1
    s1 = " The "PYTHON" is one of the programming languages"
                ^
SyntaxError: invalid syntax
```

In [ ]:
```
S = " \"PYTHON\" is one of the programming languages"
S
```

LIST

*We can have diff. data types in a list

List declaration & initialisation

In [147…
```
l = [] # Empty list
```

In [149…
```
type(l)
```

Out[149…
```
list
```

In [151…
```
l = [25, 3.14, 'Hello', True, 2+4j]
l
```

Out[151…
```
[25, 3.14, 'Hello', True, (2+4j)]
```

In [153…
```
l.append(30)
l
```

Out[153… [25, 3.14, 'Hello', True, (2+4j), 30]

In [155…
```
len(l)
```

Out[155… 6

List indexing

In [157…
```
l
```

Out[157… [25, 3.14, 'Hello', True, (2+4j), 30]

In [159…
```
l[-4]
```

Out[159… 'Hello'

In [161…
```
l[4]
```

Out[161… (2+4j)

In [163…
```
l1 = ['CME', 4, ['pavani',34],['Anu',40]] #Nested list
```

In [165…
```
l1
```

Out[165… ['CME', 4, ['pavani', 34], ['Anu', 40]]

In [167…
```
l1[2][1] # nested indexing
```

Out[167… 34

In [169…
```
l1[3][0]
```

Out[169… 'Anu'

In [171…
```
l1[1]
```

Out[171… 4

In [173…
```
l
```

Out[173… [25, 3.14, 'Hello', True, (2+4j), 30]

In [175…
```
l[2:-1] # List slicing
```

Out[175… ['Hello', True, (2+4j)]

In [177…
```
l[0:3]
```

Out[177… [25, 3.14, 'Hello']

In [179…
```
l[:3]
```

Out[179…
```
[25, 3.14, 'Hello']
```

In [181…
```
l[2:]
```

Out[181…
```
['Hello', True, (2+4j), 30]
```

List Modifying functions

In [183…
```
l.append(10)
```

In [185…
```
l
```

Out[185…
```
[25, 3.14, 'Hello', True, (2+4j), 30, 10]
```

In [187…
```
l.add(10)
l
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[187], line 1
----> 1 l.add(10)
      2 l

AttributeError: 'list' object has no attribute 'add'
```

In [189…
```
l.insert(1,10)
```

In [191…
```
l # Duplications allowed
```

Out[191…
```
[25, 10, 3.14, 'Hello', True, (2+4j), 30, 10]
```

In [193…
```
l.remove(30)
l
```

Out[193…
```
[25, 10, 3.14, 'Hello', True, (2+4j), 10]
```

In [195…
```
l.pop()
l
```

Out[195…
```
[25, 10, 3.14, 'Hello', True, (2+4j)]
```

In [197…
```
l.pop(2)
l
```

Out[197…
```
[25, 10, 'Hello', True, (2+4j)]
```

In [199…
```
l1
```

Out[199… ['CME', 4, ['pavani', 34], ['Anu', 40]]

In [201…
```
l2 = [25,3.25,True,'hello',5+4j]
l2
```

Out[201… [25, 3.25, True, 'hello', (5+4j)]

In [203…
```
l.clear()
```

In [205…
```
l
```

Out[205… []

In [207…
```
del l1[3][1]
l1
```

Out[207… ['CME', 4, ['pavani', 34], ['Anu']]

In [209…
```
l3 = l2
l3
```

Out[209… [25, 3.25, True, 'hello', (5+4j)]

In [211…
```
l4 = l3.copy()
l4
```

Out[211… [25, 3.25, True, 'hello', (5+4j)]

In [213…
```
id(l2), id(l3), id(l4)
```

Out[213… (257232771328, 257232771328, 257232769920)

In [215…
```
l2[2] = 45
l2
```

Out[215… [25, 3.25, 45, 'hello', (5+4j)]

In [217…
```
l3
```

Out[217… [25, 3.25, 45, 'hello', (5+4j)]

In [219…
```
l4
```

Out[219… [25, 3.25, True, 'hello', (5+4j)]

In [221…
```
l5 = l3 + l4
l5
```

Out[221… [25, 3.25, 45, 'hello', (5+4j), 25, 3.25, True, 'hello', (5+4j)]

In [223…
```
l2.extend(l4) # extension of l4 for l2
l2
```

Out[223… [25, 3.25, 45, 'hello', (5+4j), 25, 3.25, True, 'hello', (5+4j)]

In [225…
```
print(l1)
print(l2)
print(l3)
print(l4)
```

```
['CME', 4, ['pavani', 34], ['Anu']]
[25, 3.25, 45, 'hello', (5+4j), 25, 3.25, True, 'hello', (5+4j)]
[25, 3.25, 45, 'hello', (5+4j), 25, 3.25, True, 'hello', (5+4j)]
[25, 3.25, True, 'hello', (5+4j)]
```

In [227…
```
del l2
```

In [229…
```
del l3
```

In [231…
```
print(l1)

print(l4)
```

```
['CME', 4, ['pavani', 34], ['Anu']]
[25, 3.25, True, 'hello', (5+4j)]
```

In [233…
```
l1.extend(l4)
l1
```

Out[233… ['CME', 4, ['pavani', 34], ['Anu'], 25, 3.25, True, 'hello', (5+4j)]

In [235…
```
l5 = l1.copy()
l5
```

Out[235… ['CME', 4, ['pavani', 34], ['Anu'], 25, 3.25, True, 'hello', (5+4j)]

In [237…
```
l5.clear()
```

In [239…
```
l5
```

Out[239… []

In [241…
```
l4
```

Out[241… [25, 3.25, True, 'hello', (5+4j)]

In [243…
```
True in l4
```

Out[243… True

In [245…
```
0 in l4
```

Out[245… False

In [247…
```
25 in l4
```

Out[247… True

In [249…
```
'CME' in l1
```

Out[249… True

In [251…
```
l1
```

Out[251… ['CME', 4, ['pavani', 34], ['Anu'], 25, 3.25, True, 'hello', (5+4j)]

In [253…
```
l1.reverse()
l1
```

Out[253… [(5+4j), 'hello', True, 3.25, 25, ['Anu'], ['pavani', 34], 4, 'CME']

In [255…
```
l1.sort()
l1
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[255], line 1
----> 1 l1.sort()
      2 l1

TypeError: '<' not supported between instances of 'str' and 'complex'
```

In [263…
```
l5 = [56,98,45,95,53,22]
l5.sort()
l5
```

Out[263… [22, 45, 53, 56, 95, 98]

In [267…
```
l5.sort(reverse = True)
l5
```

Out[267… [98, 95, 56, 53, 45, 22]

loop in list

In [270…
```
for i in l4:
    print(i)
```

```
25
3.25
True
hello
(5+4j)
```

In [272…
```
for i in enumerate(l1):
    print(i)
```

```
(0, (5+4j))
(1, 'hello')
(2, True)
(3, 3.25)
(4, 25)
(5, ['Anu'])
(6, ['pavani', 34])
(7, 4)
(8, 'CME')
```

In [274…
```
l4.extend(l1)
l4
```

Out[274…
```
[25,
 3.25,
 True,
 'hello',
 (5+4j),
 (5+4j),
 'hello',
 True,
 3.25,
 25,
 ['Anu'],
 ['pavani', 34],
 4,
 'CME']
```

In [276…
```
l4.count(True)
```

Out[276… 2

All() & any() functions

In [279…
```
l4
```

Out[279…
```
[25,
 3.25,
 True,
 'hello',
 (5+4j),
 (5+4j),
 'hello',
 True,
 3.25,
 25,
 ['Anu'],
 ['pavani', 34],
 4,
 'CME']
```

In [281…
```
all(l4)
```

Out[281… True

In [283…
```
all(l1)
```

Out[283… True

In [285…
```
l1.append(0)
```

In [287…
```
any(l1)
```

Out[287… True

In [289…
```
all(l1)
```

Out[289… False

In [ ]: