In [1]:
```
a=5
a
```

Out[1]: 5

In [2]:
```
type(a)
```

Out[2]: int

In [3]:
```
l=[] # This is the case of an Empty List
l
```

Out[3]: []

Data Structure

In [4]:
```
type(l)
```

Out[4]: list

In [5]:
```
l.append(10) # in this Case i want to add value is 10
```

In [6]:
```
l
```

Out[6]: [10]

In [1]:
```
l
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[1], line 1
----> 1 l

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

In [2]:
```
1=[]
```

```
  Cell In[2], line 1
    1=[]
    ^
SyntaxError: cannot assign to literal here. Maybe you meant '==' instead of '='?
```

In [3]:
```
l=[]
l
```

Out[3]: []

In [4]:
```
l.append(10)
L
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[4], line 2
      1 l.append(10)
----> 2 L

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

In [5]:
```
l
```

Out[5]:
```
[10]
```

In [6]:
```
l.append(20)
l.append(30)
l.append(40)
l.append(50)
```

In [7]:
```
l
```

Out[7]:
```
[10, 20, 30, 40, 50]
```

In [8]:
```
l.append(70)
l.append(80)
l.append(90)
```

In [9]:
```
i
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[9], line 1
----> 1 i

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

In [10]:
```
l
```

Out[10]:
```
[10, 20, 30, 40, 50, 70, 80, 90]
```

In [11]:
```
l.append(80,90,10)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[11], line 1
----> 1 l.append(80,90,10)

TypeError: list.append() takes exactly one argument (3 given)
```

In [12]:
```
l.append(10)
```

In [13]:
```
l
```

Out[13]:
```
[10, 20, 30, 40, 50, 70, 80, 90, 10]
```

In [14]:
```
l1=l.copy()
```

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

Out[15]: [10, 20, 30, 40, 50, 70, 80, 90, 10]

In [16]:
```
l1.append(2.3)
l1.append('nit')
l1.append(1+2j)
l1.append([1,2,4])
```

In [17]:
```
l1
```

Out[17]: [10, 20, 30, 40, 50, 70, 80, 90, 10, 2.3, 'nit', (1+2j), [1, 2, 4]]

In [18]:
```
print(l)
print(l1)
```

```
[10, 20, 30, 40, 50, 70, 80, 90, 10]
[10, 20, 30, 40, 50, 70, 80, 90, 10, 2.3, 'nit', (1+2j), [1, 2, 4]]
```

In [19]:
```
l==l1
```

Out[19]: False

In [20]:
```
l2=l.copy()
```

In [21]:
```
l==l2
```

Out[21]: True

In [22]:
```
print(l)
print(l2)
print(l1)
```

```
[10, 20, 30, 40, 50, 70, 80, 90, 10]
[10, 20, 30, 40, 50, 70, 80, 90, 10]
[10, 20, 30, 40, 50, 70, 80, 90, 10, 2.3, 'nit', (1+2j), [1, 2, 4]]
```

In [23]:
```
l[:]
```

Out[23]: [10, 20, 30, 40, 50, 70, 80, 90, 10]

In [24]:
```
l{0}
```

```
  Cell In[24], line 1
    l{0}
     ^
SyntaxError: invalid syntax
```

In [25]:
```
l[0]
```

Out[25]: 10

In [26]:
```
l[0]=100
```

In [27]:
```
l
```

Out[27]: [100, 20, 30, 40, 50, 70, 80, 90, 10]

In [28]:
```
l[-1]=200
```

In [29]:
```
l
```

Out[29]:
```
[100, 20, 30, 40, 50, 70, 80, 90, 200]
```

In [30]:
```
l[5]=60
```

In [31]:
```
l
```

Out[31]:
```
[100, 20, 30, 40, 50, 60, 80, 90, 200]
```

In [32]:
```
l[3:]
```

Out[32]:
```
[40, 50, 60, 80, 90, 200]
```

In [33]:
```
l[10:]
```

Out[33]:
```
[]
```

In [34]:
```
 l{10}
```

```
  Cell In[34], line 1
    l{10}
     ^
SyntaxError: invalid syntax
```

In [35]:
```
l[10]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[35], line 1
----> 1 l[10]

IndexError: list index out of range
```

In [36]:
```
l[:10]
```

Out[36]:
```
[100, 20, 30, 40, 50, 60, 80, 90, 200]
```

In [37]:
```
l2.clear()
```

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

Out[38]:
```
[]
```

In [39]:
```
del l2
```

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

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[40], line 1
----> 1 l2

NameError: name 'l2' is not defined
```

In [41]:
```
l1
```

Out[41]:
```
[10, 20, 30, 40, 50, 70, 80, 90, 10, 2.3, 'nit', (1+2j), [1, 2, 4]]
```

In [42]:
```
l1[0:12:5]
```

Out[42]:
```
[10, 70, 'nit']
```

In [43]:
```
l1[0:12:3]
```

Out[43]:
```
[10, 40, 80, 2.3]
```

In [44]:
```
l1.index('nit')
```

Out[44]:
```
10
```

In [ ]:
```

```