27th

List datastructure

In [26]:
```
i = 6.6
type(i)
```

Out[26]:
```
float
```

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

Out[27]:
```
[]
```

In [28]:
```
type(l)
```

Out[28]:
```
list
```

In [29]:
```
len()
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[29], line 1
----> 1 len()

TypeError: len() takes exactly one argument (0 given)
```

In [30]:
```
len(l)
```

Out[30]:
```
0
```

In [31]:
```
l.append(10)
```

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

Out[32]:
```
[10]
```

In [33]:
```
len(l)
```

Out[33]:
```
1
```

In [34]:
```
l.append(10,20,30,40)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[34], line 1
----> 1 l.append(10,20,30,40)

TypeError: list.append() takes exactly one argument (4 given)
```

In [35]:
```
l.append(10)
l.append(20)
l.append(30)
l.append(40)
```

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

Out[36]:
```
[10, 10, 20, 30, 40]
```

In [37]:
```
l1 = []
```

In [42]:
```
l1.append(70)
l1.append(2.3)
l1.append(True)
l1.append('1+2j')
l1.append([1,2,3])
```

In [39]:
```
l1
```

Out[39]:
```
[70, 2.3, True, '1+2j', [1, 2, 3]]
```

In [43]:
```
print(l)
print(l1)
```

```
[10, 10, 20, 30, 40]
[70, 2.3, True, '1+2j', [1, 2, 3], 70, 2.3, True, '1+2j', [1, 2, 3]]
```

In [44]:
```
print(id(l))
print(id(l1))
```

```
2692933135744
2692933521920
```

In [45]:
```
print(len(l))
print(len(l1))
```

```
5
10
```

In [46]:
```
l1
```

Out[46]:
```
[70, 2.3, True, '1+2j', [1, 2, 3], 70, 2.3, True, '1+2j', [1, 2, 3]]
```

In [47]:
```
l2 = l1.copy()
```

In [48]:
```
l2
```

Out[48]:
```
[70, 2.3, True, '1+2j', [1, 2, 3], 70, 2.3, True, '1+2j', [1, 2, 3]]
```

In [49]:
```
l1 == l2
```

Out[49]:
```
True
```

In [50]:
```
l
```

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

In [51]:
```
l == l2
```

Out[51]:
```
False
```

In [52]:
```
l != l2
```

Out[52]:
```
True
```

In [53]:
```
l
```

Out[53]:
```
[10, 10, 20, 30, 40]
```

In [54]:
```
l1 == l2
```

Out[54]:
```
True
```

In [55]:
```
print(l1)
print(l2)
```

```
[70, 2.3, True, '1+2j', [1, 2, 3], 70, 2.3, True, '1+2j', [1, 2, 3]]
[70, 2.3, True, '1+2j', [1, 2, 3], 70, 2.3, True, '1+2j', [1, 2, 3]]
```

In [56]:
```
print(id(l1)) == print(id(l2))
```

```
2692933521920
2692933851072
```

Out[56]:
```
True
```

In [57]:
```
a = 5
b = 5
```

In [58]:
```
print(id(a)) == print(id(b))
```

```
140711955829672
140711955829672
```

Out[58]: True

In [59]:
```
l
```

Out[59]: [10, 10, 20, 30, 40]

In [60]:
```
l.remove(1000)
```

```
---------------------------------------------------------------------------
ValueError                                Traceback (most recent call last)
Cell In[60], line 1
----> 1 l.remove(1000)

ValueError: list.remove(x): x not in list
```

In [61]:
```
l.remove(10)
```

In [62]:
```
l
```

Out[62]: [10, 20, 30, 40]

In [63]:
```
l.remove(10)
l
```

Out[63]: [20, 30, 40]

In [64]:
```
l
```

Out[64]: [20, 30, 40]

string indexing

In [65]:
```
s7 = 'nareshit'
s7
```

Out[65]: 'nareshit'

In [66]:
```
s7[0]
```

Out[66]: 'n'

In [67]:
```
s7[1]
```

Out[67]:
```
'a'
```

In [68]:
```
s7[10]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[68], line 1
----> 1 s7[10]

IndexError: string index out of range
```

In [69]:
```
s7
```

Out[69]:
```
'nareshit'
```

In [70]:
```
s7[-3]
```

Out[70]:
```
'h'
```

In [71]:
```
s7[-9]
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[71], line 1
----> 1 s7[-9]

IndexError: string index out of range
```

In [72]:
```
s7[-8]
```

Out[72]:
```
'n'
```

In [73]:
```
s7
```

Out[73]:
```
'nareshit'
```

In [74]:
```
for i in s7:
    print(i)
```

```
n
a
r
e
s
h
i
t
```

slicing [:]

In [75]:
```
s7
```

Out[75]:
```
'nareshit'
```

In [76]:
```
s8 = 'abcdefghi'
s8
```

Out[76]:
```
'abcdefghi'
```

In [77]:
```
s8[0:9]
```

Out[77]:
```
'abcdefghi'
```

In [78]:
```
s8[1:8]
```

Out[78]:
```
'bcdefgh'
```

In [79]:
```
s8
```

Out[79]:
```
'abcdefghi'
```

In [80]:
```
s8[1:-3]
```

Out[80]:
```
'bcdef'
```

In [81]:
```
s8
```

Out[81]:
```
'abcdefghi'
```

In [82]:
```
s8[1:-4]
```

Out[82]:
```
'bcde'
```

In [83]:
```
step_indexing = [1,2,3,4,5,6,7,8,9,10]
step_indexing
```

Out[83]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [84]:
```
step_indexing[0:10:4]
```

Out[84]:
```
[1, 5, 9]
```

In [85]:
```
step_indexing
```

Out[85]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [86]:
```
step_indexing[0:10:5]
```

Out[86]:
```
[1, 6]
```

In [87]:
```
step_indexing
```

Out[87]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [88]:
```
step_indexing[:]
```

Out[88]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [89]:
```
l
```

Out[89]:
```
[20, 30, 40]
```

In [90]:
```
l5 = l.reverse()
l5
```

In [91]:
```
l
```

Out[91]:
```
[40, 30, 20]
```

In [ ]:

In [ ]:

In [ ]:

In [ ]: