

Agenda

- ① List Slicing
- ② 2D Lists

List Slicing

③ `range (start, end, jump)`

With List Slicing, we can directly create a new-list without any loop using syntax as

`range` $\xrightarrow{+ve}$

list1 = [11, 12, 13, 15, 18, 20]

list1[3] → 15
list1[-3] → 15

Slicing \rightarrow indexing + Range

list1 [start end jump]

Some list

↓

0

↓

len(list1)

↓

1

A number line diagram illustrating the range of x . The line is labeled x at the right end. It has tick marks for 0, 1, 2, 3, 4, and 5. The value 5 is circled in red. The text $x \geq 5$ is written above the line, and $x < 5$ is written below the line.

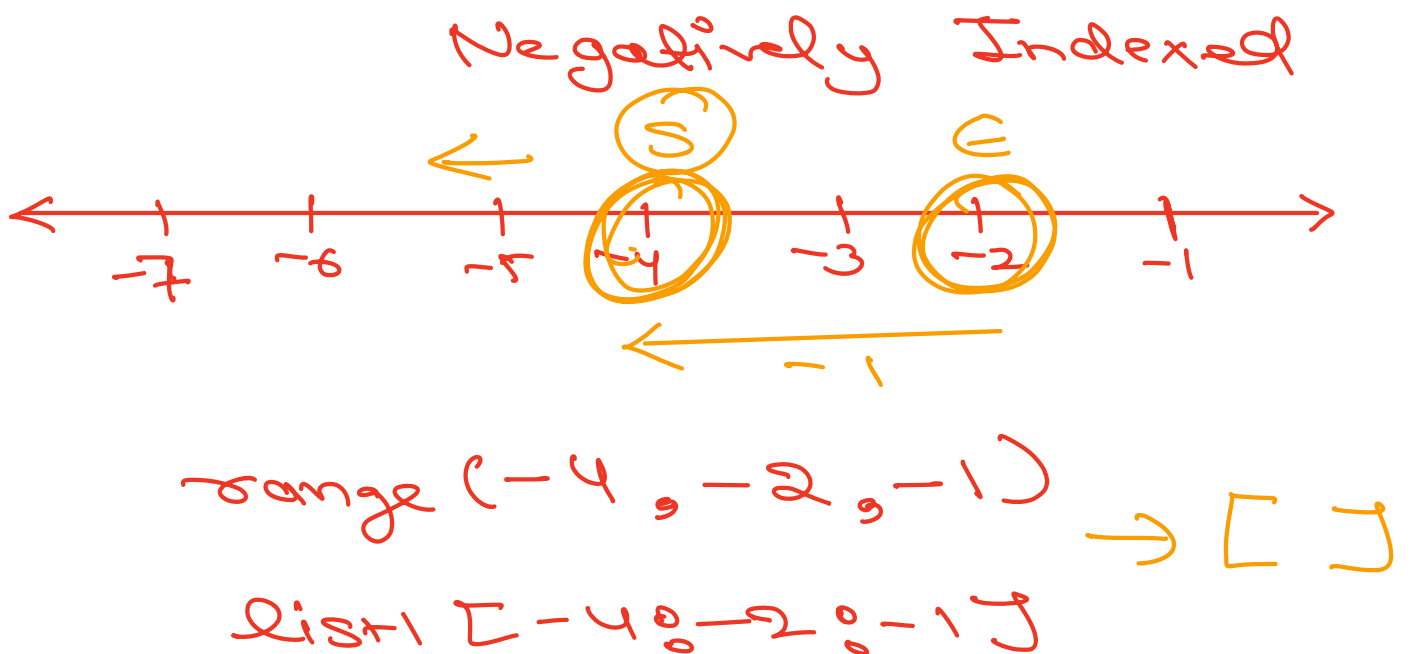
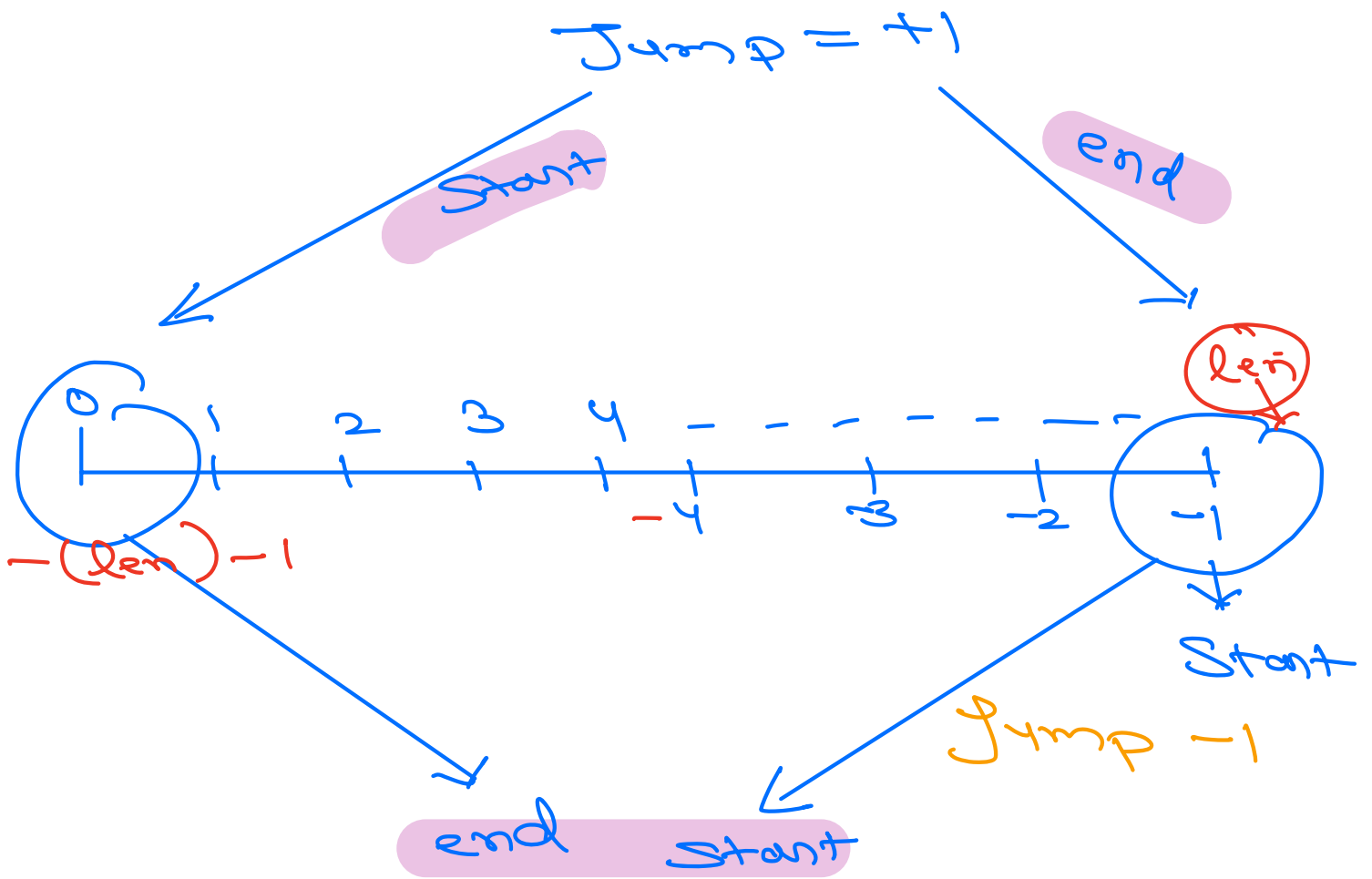
$list1 = [11, 12, 13, 15, 18, 20]$

List 1 [3 : 6 : 1]

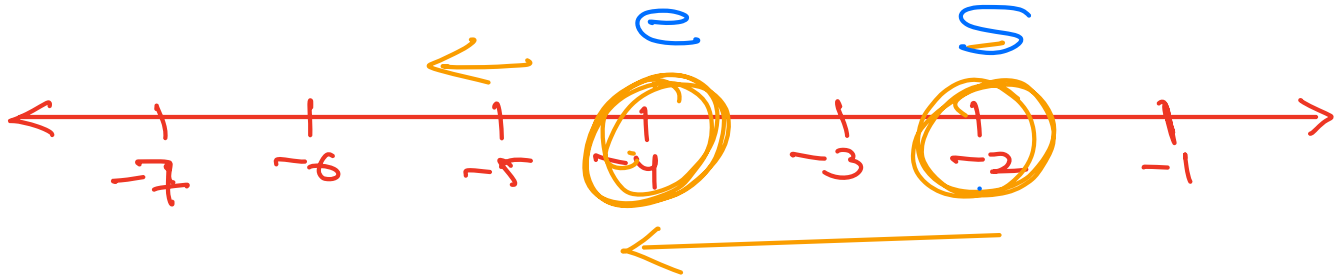
↖ default

List1 [3 : 6]

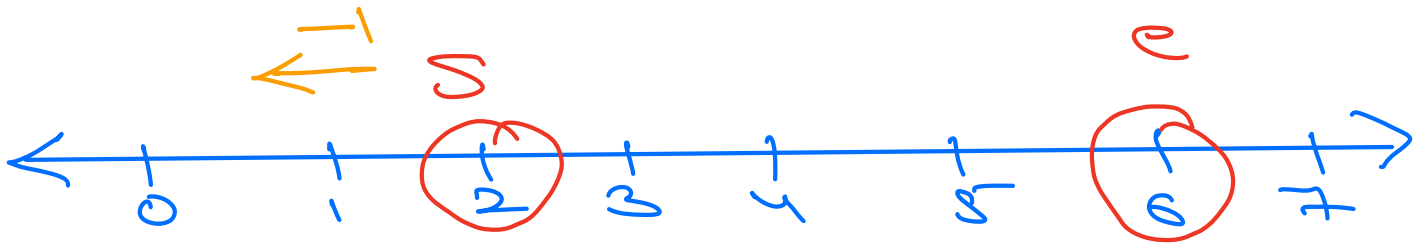
list1 [3] 



$$\text{rang}(-2, -4, -1)$$



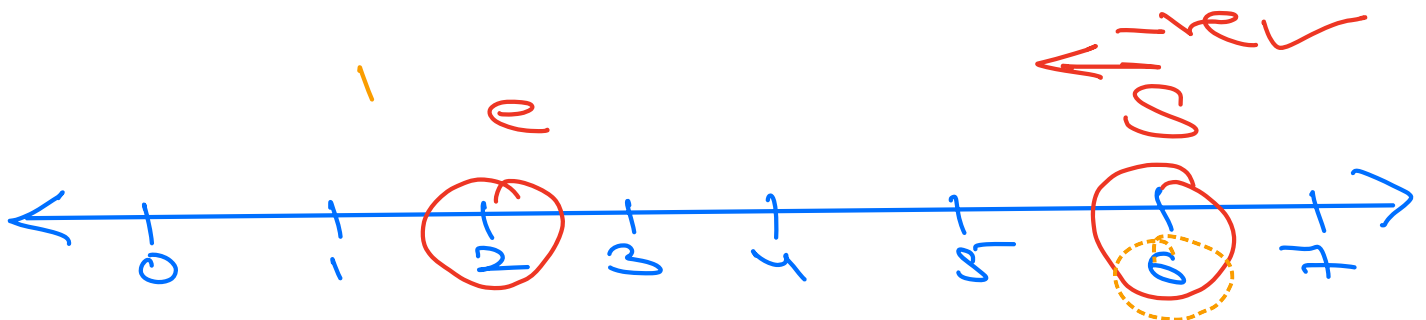
$$[-2, -3] \times$$



$$\text{List } [2, 6] - \cup \Rightarrow []$$



$$\text{List } [6, 2] - \cup \Rightarrow 6, 5, 4, 3, \times$$



list [2 :]

list1 [len(list)-2 :]

2 Dim Lists

1	2	3
4	5	6
7	8	9

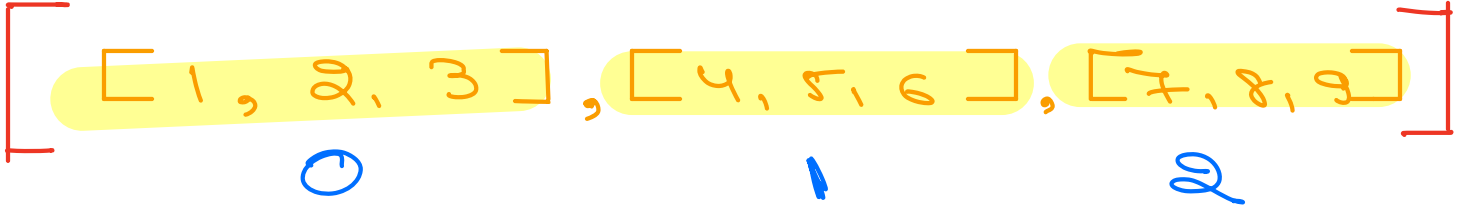
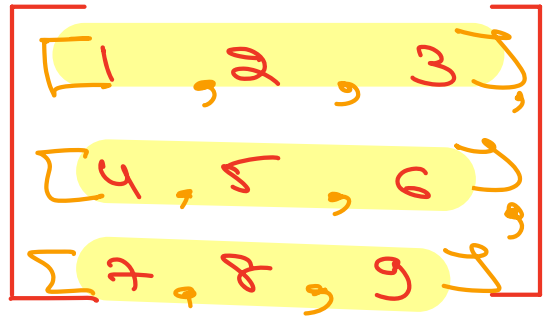
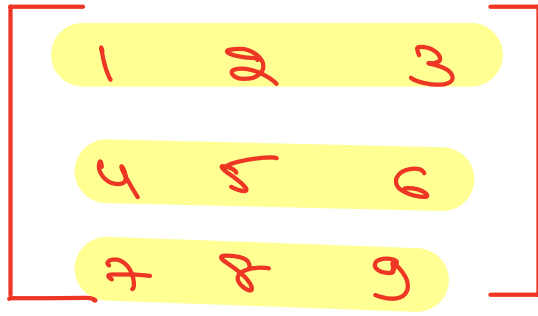
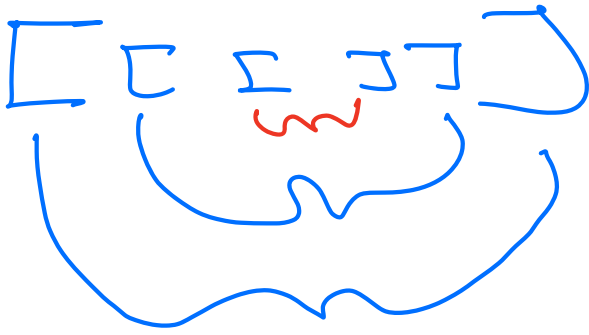
← row 1
← row 2
← row 3

3x3

How do we represent this
in python?

[[1, 2, 3], [4, 5, 6], [7, 8, 9]]

2d List 3x3
Nested List



mat [1] \rightarrow [4, 5, 6]
 mat [1][2] \rightarrow 6

0 →

8 ?

max [2] [1]

max [-1] [-2]

Indexing on 2D List

List1 [row] [col]

Iteration

on 2D List

List1 = [1, 2, 3]

for i in List1:
 print(i)

}
0 → 1
1 → 2
2 → 3

mat =

1	2	3	0
4	5	6	1
7	8	9	2

for i in mat:

print(i)

for j in i:

print(j)

i = [1, 2, 3]
i = [4, 5, 6]
i = [7, 8, 9]

j = 1
j = 2
j = 3
i = 4, 5, 6
j = 4
j = 5
j = 6

i = 7, 8, 9
j = 7
j = 8
j = 9

$$\text{rev_num} = 0$$

$$n = 321$$

$$\textcircled{1} \quad d = n \% 10$$

$$\text{rev_num} = \text{rev_num} \times 10 + d$$

$$\begin{array}{r} 0 \times 10 \\ + 1 \\ \hline 1 \end{array}$$

$$\textcircled{2} \quad n = n // 10 \rightarrow 32$$

$$n \% 10 = 2$$

$$\text{rev_num} = 1 \times 10 + 2 = 12$$

$\textcircled{3}$

$$n = n // 10 \rightarrow 3$$

$$n \% 10 = 3$$

$$\text{rev_num} = 12$$

$$12 \times 10 + 3 = 123$$

$\textcircled{4}$

$$n // 10$$

$\textcircled{0} \quad \times$