

Nested List

A list within another list is called as nested list or nesting of a list.

Ex:-

```
a = [10, 20, 30, [50, 60]]
```

```
b = [50, 60]
```

```
a = [10, 20, 30, b]
```

```
a = [ [10, 20, 30], [40, 50, 60] ]
```

```
a = [ [10, 20, 30],  
      [40, 50, 60] ]
```

Index

$a = [10, 20, 30, [50, 60]]$

$b = [50, 60]$

$a = [10, 20, 30, b]$

10	20	30	<table><tr><td>50</td><td>60</td></tr><tr><td>[0]</td><td>[1]</td></tr></table>	50	60	[0]	[1]
50	60						
[0]	[1]						
[0]	[1]	[2]	[3]				

$a = [[10, 20, 30], [40, 50, 60]]$

$a = [[10, 20, 30],$
 $[40, 50, 60]]$

	0	1	2
0	10	20	30
1	40	50	60

Accessing Nested List

```
a = [10, 20, 30, [50, 60]]
```

```
b = [50, 60]
```

```
a = [10, 20, 30, b]
```

```
print(a[0])
```

```
print(a[1])
```

```
print(a[2])
```

```
print(a[3][0])
```

```
print(a[3][1])
```

```
print(a)
```

All elements

10	20	30	<table><tr><td>50</td><td>60</td></tr><tr><td>[0]</td><td>[1]</td></tr></table>	50	60	[0]	[1]
50	60						
[0]	[1]						
[0]	[1]	[2]	[3]				

Accessing Nested List

```
a = [ [10, 20, 30],  
      [40, 50, 60] ]
```

```
print(a[0][0])
```

```
print(a[0][1])
```

```
print(a[0][2])
```

```
print(a[1][0])
```

```
print(a[1][1])
```

```
print(a[1][2])
```

```
print(a)
```

All elements

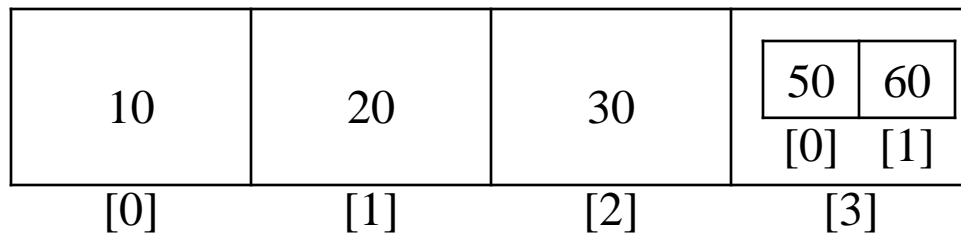
	0	1	2
0	10	20	30
1	40	50	60

Modifying Nested List

`a = [10, 20, 30, [50, 60]]`

`b = [50, 60]`

`a = [10, 20, 30, b]`



`a[1] = 100`

`a[3][0] = 5`

Modifying Nested List

a = [[10, 20, 30],
 [40, 50, 60]]

a[0][1] = 2

a[1][2] = 6

	0	1	2
0	10	20	30
1	40	50	60

Accessing Nested list using for loop

```
a = [ [10, 20, 30],  
      [40, 50, 60] ]
```

Without index

```
for r in a:  
    for c in r:  
        print(c)  
    print( )
```

Outer for loop

Inner for loop

Inner for loop

With index

```
n = len(a)  
for i in range(n):  
    for j in range(len(a[i])):  
        print(a[i][j])  
    print( )
```

Outer for loop

The outer for loop represents the rows and the inner for loop represents the columns in each row.

Accessing Nested list using while loop

```
a = [ [10, 20, 30],  
      [40, 50, 60] ]
```

```
n = len(a)
```

```
i = 0
```

```
while i < n :
```

```
    j = 0
```

```
    while j < len(a[i]):
```

```
        print(a[i][j])
```

```
        j+=1
```

```
    i+=1
```