

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



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# Chapter-4

## List & Tuples

### ➤ **List:**

A list is a data structure in Python that is a mutable, or changeable, ordered sequence of elements.

### ➤ **List indexing:**

“Indexing” means referring to an element of an iterable by its position within the iterable.

### ➤ **List slicing:**

In short, slicing is a flexible tool to build new lists out of an existing list. Python supports slice notation for any sequential data type like lists, strings, tuples, bytes, bytearrays, and ranges

### programs

```
python > tuple.py > ...
1  # any type of data in list
2  friends=["saira" , "faria" , "anum", 3, "ayesha"]
3  print(friends)
4  #list indexing
5  #print values where data in index 2
6  print(friends[2])
7  v= friends[2]
8  #print index 1 to 3 values within index 2 in friend list
9  print(friends[2][1:3])
10
```

PROBLEMS OUTPUT DEBUG CONSOLE **TERMINAL**

```
PS D:\software h> python -u "d:\software h\python\tuple.py"
['saira', 'faria', 'anum', 3, 'ayesha']
anum
nu
PS D:\software h>
```

+ v ... ^ x

powerShell

Code

## o List Method:

The list() function **creates a list object**. A list object is a collection which is ordered and changeable.

```
python > listmethod.py > ...
1  #list method
2  list =[3,4,8,6,7,1]
3  #list sort
4  list.sort()
5  print(list)
6  #list reverse
7  list.reverse()
8  print(list)
9  #list append
10 list.append(9)
11 print(list)
12 #list insert
13 list.insert(3,15)
14 print(list)
15 #list pop
16 list.pop(4)
17 print(list)
18 #list remove
19 list.remove(3)
20 print(list)
```

## Output

```
19 list.remove(3)
20 print(list)

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

PS D:\software h> python -u "d:\software h\python\listmethod.py"
[1, 3, 4, 6, 7, 8]
[8, 7, 6, 4, 3, 1]
[8, 7, 6, 4, 3, 1, 9]
[8, 7, 6, 15, 4, 3, 1, 9]
[8, 7, 6, 15, 3, 1, 9]
[8, 7, 6, 15, 1, 9]
PS D:\software h>
```

## o Tuple:

Python type() is a built-in function that is used to return the type of data stored in the objects or variables in the program.



Example:

```
python > tuple.py > ...
1  #tuple types in list
2  #vaule is not change in tuple because it immutable
3  b = ()
4  print ["() is empty tuple")
5  b = (1,)
6  print ("(1,) is tuple")
7  b =(2,3,4)
8  print ("((2,3,4) more than tuple)")
9  b =(3)+(4)
10 print ("(3)+(4) integer tuple)")

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
PS D:\software h> python -u "d:\software h\python\tuple.py"
() is empty tuple)
(1,) is tuple)
((2,3,4) more than tuple)
(3)+(4) integer tuple)
PS D:\software h>
```

## ➤ Tuple method:

Tuples are used to store multiple items in a single variable.

```
python > tuple method.py > ...
1  #tuple method
2  a= (2,3,4)
3  a.count(1)
4  print(a)
5

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL
PS D:\software h> python -u "d:\software h\python\tuple method.py"
(2, 3, 4)
PS D:\software h>
```