

Chapter 4 - Lists and Tuples

Python Lists are containers to store a set of values of any data type

```
friends = ["Apple", "Akash", "Rohan", 7, false]
```

↓ str()
↓
↓ int()
↓ bool()

Can store value of any datatype

List Indexing

A list can be indexed just like a string

```
L1 = [7, 9, "Harry"]
```

`L1[0] => 7`

`L1[1] => 9`

`L1[70] => Error`

`L1[0:2] => [7, 9] => List Slicing`

List Methods

Consider the following list:

```
L1 = [1, 8, 7, 2, 21, 15]
```

1. `L1.sort()`: updates the list to `[1, 2, 7, 8, 15, 21]`

2. `L1.reverse()`: updates the list to `[15, 21, 2, 7, 8, 1]`

3. `L1.append(8)`: adds 8 at the end of the list

4. `L1.insert(3, 8)`: This will add 8 at 3 index

- 5> `L1.pop(2)`: Will delete element at index 2 and return its value
- 6> `L1.remove(21)`: Will remove 21 from the list.

Tuples in Python

A tuple is an immutable data type in python.
↳ Cannot change

`a = ()` ⇒ Empty tuple

`a = (1,)` ⇒ Tuple with only one element needs a comma

`a = (1, 7, 2)` ⇒ Tuple with more than one element

Once defined a tuple's elements can't be altered or manipulated.

Tuple methods

Consider the following tuple

`a = (1, 7, 2)`

- 1> `a.count(1)`: `a.count(1)` will return number of times 1 occurs in a.
- 2> `a.index(1)`: `a.index(1)` will return the index of first occurrence of 1 in a.

Chapter 4- Practice Set

- 1 Write a program to store seven fruits in a list entered by the user.
- 2 Write a program to accept marks of 6 students and display them in a sorted manner
- 3 Check that a tuple cannot be changed in python
- 4 Write a program to sum a list with 4 numbers.
- 5 Write a program to count the number of zeros in the following tuple:

a = (7, 0, 8, 0, 0, 9)