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List & Tuples

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

```
friends = ["Suraj", "Jay", "Indrajeet",  
           "Suyash", "Akshay"]
```

List Indexing

A List can be indexed just like a string.

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

```
L1[0] → 7
```

```
L1[1] → 9
```

```
L1[70] → Error
```

```
L1[0:2] → [7, 9] ⇒ List Slicing
```

List Methods

Consider the following list.

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

1] `sample_List.sort()` :

Update the List to

[1, 2, 4, 8, 15, 21]

2] `sample_List.reverse`

Update List to

[~~21~~, 21, 15, 21, 2, 7, 8, 1]

3] `sample_List.append(8)`

Update List to

↳ Add 8 at end of List.

4] `sample_List.insert(3, 8)`

↳ This will add 8 at index 3.

5] `sample_List.pop(2)` :

Will delete element at index 2
& return its value.

6] `sample_List.remove(21)` :

Will remove 21 from the List.

Tuples in python

A tuple is an immutable datatype in python.

* Immutable \rightarrow Cannot change

$q = () \rightarrow$ Empty Tuple

$q = (1) \rightarrow$ Tuple with only one element needs a comma.

$q = (1, 7, 2) \rightarrow$ Tuple with more than one element.

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

Tuple Method's

Consider the following tuple

$q = (1, 7, 2)$

1] $q.count :$

$q.count[i]$ will return the number of times i occurs in q

2] $q.index(i) :$

$q.index(i)$ will return the index of occurrence of i in q .

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Practice Set

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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 & display them in a sorted manner.

3] Check that the tuple cannot be changed in python.

4] Write a python to sum a list with 4 numbers.

5] Write a python program to count the number of zero in following tuple.

$q = (7, 0, 8, 0, 0, 9)$