UNIT IV LISTS, TUPLES, DICTIONARIES

4.1 LISTS

Define List

A list is an ordered set of values, where each value is identified by an index. The values in a list are called its elements or items. The items can be of different types (int, float, string). To create a new list, the simplest way is to enclose the elements in square bracket [ ]. Lists are mutable which means the items in the list can be add or removed later.

Example:

```
>>> [ ]                                  #empty list
>>> [1,2,3]                              #list of integers
>>> ['physics','chemistry','python']     #list of strings
>>> [1,'hello',3.4]                      #list with mixed datatypes
>>> list1=['a','b,'c''d']
>>> print(list1)
```

List can have another list as an item. This is called nested list.

Mylist=['mouse',[8,6,5], 3.2]

List are mutable.

Lists are mutable which means the items in the list can be added or removed later. >>>mark=[98,87,94]

```
>>>mark[2]=100
>>>print(mark)          #Prints [98,87,100]
```

To access the elements in a list

The syntax for accessing an element is same as string. The square brackets are used to access the elements. The index value within the square brackets should be given.

```
>>>list1=[] #Empty list
>>>list2=[1,2,3,4,5,6,7,8]
>>>list3=['Hello',3.5,'abc',4]
```

print(list3[1]) → 3.5

List Length:

The function **len** returns the length of a list, which is equal to the number of elements.

len(list2) → 8

len(list3) → 4

List Membership:

The memberrship operator **"in"** and **"not in"** can also be used in a list to check whether the element is present in the list or not.

Ex:

list3=['Hello',3.5,'abc',4]

'Hello' in list3 → returns True