Date :

Lists in python

In python, the sequence of various data types is stored in a list. A list is a collection of different kinds of values or items. Since Python lists are mutable, we can change their elements after forming. The comma (,) and the square brackets [enclose the list's items] serve as seprators.

Although six python data types can hold sequences, the list is the most common and reliable form. A list, a type of sequence data is used to store the collection of data.

List declaration:

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```
# sample list
list1 = [1,2," Python","Program",15.9]
list2 = ["Amy","Ryan","Henry","Emma"]

# Printing list
print(list1)
print(list2)

# printing the type of list
print (type(list1))
print ( type(list2))
```

Date :

Output:

```
[1, 2, 'python', 'Program', 15.9]
['Amy', 'Ryan', 'Henry', 'Emma']
<class 'list'>
<class 'list'>
```

Characteristics of lists:

The characteristics of the List are as follows:

- The lists are in order.
- The list element can be accessed via the index
- The type list is mutable
- The rundowns are changeable sorts
- The number of various elements can be stored in a list

Ordered List checking:

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#example

```
a=[1,2,"Ram",3.50,"Rahul",5,6]
b=[1,2,5,"Ram",3.50,"Rahul",6]
a==b
```

Output

False

The indistinguishable components were remembered from

Date :

the records

Python List Operations:

The concatenation (+) and repetition (*) operators work in the same way as they were working with the strings The different operations of lists are:

1. repetition
2. Concatenation
3. Length
4. Iteration
5. Membership

1. Repetition:

The redundancy administrator empowers the rundown components to be rehashed on different occasions.

```
# repetition of list
# declaring the list
list1 = [12,14,16,18,20]
# repetition operator *
l =list1 * 2
print(l)
```

Date :

Output:

[12,14,16,18,20,12,14,16,18,20]

2. Concatenation

It concatenates the list mentioned on either side of the operator

```
# concatenation of two lists
# declaring the lists

list1 = [12,14,16,18,20]
list2 = [9,10,32,15,86]

#concatenation operation +

l = list1 + list2
Print (l)
```


Output:

[12,14,16,18,20,9,10,32,15,86]

3. Length

It is used to get the length of the list

```
#size of the list
#declaring the list
```

Date :

```
list1 = [12,14,16,18,20,23,27,39,40]
#finding the length of the list
len(list1)
```

Output:

```
9
```

4. Iteration

The for loop is used to iterate over the list elements.

```
#iteration of the list
# declaring the list
list1 = [12, 14, 16, 39, 40]
#iterating
 for i in list1:
    print(i)
```


Output:

```
12
14
16
39
40
```

5. Membership:

It returns true if a particular item exists in a

Date :

particular list otherwise false

```
# membership of the list
# declaring the list
list1=[100,200,300,400,500]

# true will be printed if value exists
# and false if not

print (600 in list1)
print (200 in list1)
print (110 in list1)
```

Output:


```
False
true
False
```

Appending / Adding element in list:

The append function in Python can add a new item to the list. In any case, the annex() capability can enhance the finish of the function.

```
l = [1,2,3,4]
l.append(6);
```

Output:

```
1,2,3,4,6
```

Date :

Removing element in the list:

The Remove() function in python can remove an element from the List. To comprehend this idea, look at the example:

```
list = [0,1,2,3,4]
list.remove(2)
```

output:

```
[0,1,3,4]
```

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