**Manipulating Lists**

Lists are mutable

**Creating a List in Python**

List = [10, 20, 14]

print("\nList of numbers: ")

print(List)

List = [1, 2, 'Geeks', 4, 'For', 6, 'Geeks']

print("\nList with the use of Mixed Values: ")

print(List)

List = [1, 2, 4, 4, 3, 3, 3, 6, 5]

print("\nList with the use of Numbers: ")

print(List)

## Accessing elements from the List

List = ["Geeks", "For", "Geeks"]

print(List[2])

List = [['Geeks', 'For'], ['Geeks']]

print(List[0][1])

List = [1, 2, 'Geeks', 4, 'For', 6, 'Geeks']

print(List[-3])

## Getting the size of Python list

List2 = [10, 20, 14]

print(len(List2))

## Taking Input of a Python List

num = input("Enter the number : ")

print ("The original number is " + str(num))

res = [int(x) for x in str(num)]

print ("The list from number is " + str(res))

## Adding Elements to a Python List

### Using append() method

List = []

print("Initial blank List: ")

print(List)

List.append(1)

List.append(2)

List.append(4)

print(List)

for i in range(1, 4):

    List.append(i)

print(List)

### Using insert() method

Syntax-> insert(position, value)

### Using extend() method

List = [1, 2, 3, 4]

print("Initial List: ")

print(List)

List.extend([8, 'Geeks', 'Always'])

print(List)

## Reversing a List

mylist = [1, 2, 3, 4, 5, 'Geek', 'Python']

mylist.reverse()

print(mylist)

## Removing Elements from the List

### Using remove() method

List = [1, 2, 3, 4, 5, 6,7, 8, 9, 10, 11, 12]

print(List)

List.remove(5)

List.remove(6)

print(List)

### Using pop() method

* removes only the last element of the list.
* to remove an element from a specific position of the List, the index of the element is passed as an argument to the

List = [1, 2, 3, 4, 5]

List.pop()

print("\nList after popping an element: ")

print(List)

List.pop(2)

print("\nList after popping a specific element: ")

print(List)

## Slicing of a List

**To print elements from beginning to a range use:**

*[: Index]*

To print elements from a specific Index till the end use :

*[Index:]*

To print the whole list in reverse order, use :

*[::-1]*

To print alternate elements:

[::2]

## List Comprehension

*newList = [ expression(element) for element in oldList if condition ]*

odd\_square = [x \*\* 2 for x in range(1, 11) if x % 2 == 1]

print(odd\_square)

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odd\_square = []

for x in range(1, 11):

    if x % 2 == 1:

        odd\_square.append(x\*\*2)

print(odd\_square)

# Q. interchange first and last elements in a list