List Indexing, Slicing, and Nested Slicing Questions

1- Write a program to access the third element from the given list. Input: [10, 20, 30, 40, 50] Output: 30

```
l=[10, 20, 30, 40, 50]
l[2]
```

```
30
```

2.Write a program to access the last element from the given list using negative indexing. Input: ['apple', 'banana', 'cherry', 'date'] Output: date

```
fruits=['apple', 'banana', 'cherry', 'date']
fruits[-1]
```

```
'date'
```

3 Write a program to change the second element to 100 in the given list. Input: [5, 10, 15, 20, 25] Output: [5, 100, 15, 20, 25]

```
# l=[5, 10, 15, 20, 25]
# l[1]=100
# print(l)
l=[5, 10, 15, 20, 25]
l.insert(1,100)
print(l)
```

```
[5, 100, 10, 15, 20, 25]
```

4 Write a program to access the first element using negative indexing. Input: [7, 14, 21, 28, 35] Output: 7

```
l=[7, 14, 21, 28, 35]
l[-5]
```

```
7
```

5 Write a program to access the second last element from the given list. Input: [1, 2, 3, 4, 5, 6] Output: 5

```
l=[1, 2, 3, 4, 5, 6]
l[-2]
```

```
5
```

Slicing Questions

6 Write a program to extract the first three elements from the given list. Input: [100, 200, 300, 400, 500, 600] Output: [100, 200, 300]

```
l=[100, 200, 300, 400, 500, 600]
l[0:3]
```

```
[100, 200, 300]
```

7 Write a program to extract all elements except the first two from the given list. Input: [2, 4, 6, 8, 10, 12] Output: [6, 8, 10, 12]

```
l=[2, 4, 6, 8, 10, 12]
l[2:]
```

```
[6, 8, 10, 12]
```

8 Write a program to extract every alternate element from the given list. Input: [5, 10, 15, 20, 25, 30, 35] Output: [5, 15, 25, 35]

```
l=[5, 10, 15, 20, 25, 30, 35]
l[0::2]
```

```
[5, 15, 25, 35]
```

9 Write a program to reverse the given list using slicing. Input: [1, 3, 5, 7, 9] Output: [9, 7, 5, 3, 1]

```
l=[1, 3, 5, 7, 9]
l[::-1]
```

```
[9, 7, 5, 3, 1]
```

10 Write a program to extract elements from index 2 to 5 from the given list. Input: [11, 22, 33, 44, 55, 66, 77] Output: [33, 44, 55, 66]

```
l=[11, 22, 33, 44, 55, 66, 77]
l[2:6]
```

```
[33, 44, 55, 66]
```

Nested Slicing Questions

11 Write a program to access the second element from the first nested list. Input: [[1, 2, 3], [4, 5, 6], [7, 8, 9]] Output: 2

```
l=[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
l[0][1]
```

```
2
```

12 Write a program to extract the last element from the last nested list. Input: [['a', 'b', 'c'], ['d', 'e', 'f'], ['g', 'h', 'i']] Output: i

```
l=[['a', 'b', 'c'], ['d', 'e', 'f'], ['g', 'h', 'i']]
l[-1][-1]
```

```
'i'
```

13 Write a program to extract the second and third lists from a given nested list. Input: [[10, 20], [30, 40], [50, 60], [70, 80]] Output: [[30, 40], [50, 60]]

```
l=[[10, 20], [30, 40], [50, 60], [70, 80]]
l[1:3]
```

```
[[30, 40], [50, 60]]
```

14 Write a program to extract the second element from all nested lists. Input: [[1, 9], [2, 8], [3, 7], [4, 6]] Output: [9, 8, 7, 6]

```
l=[[1, 9], [2, 8], [3, 7], [4, 6]]
l[0][1],l[1][1],l[2][1],l[3][1]
```

```
(9, 8, 7, 6)
```

15 Write a program to reverse all sublists in a nested list. Input: [[1, 2, 3], [4, 5, 6], [7, 8, 9]] Output: [[3, 2, 1], [6, 5, 4], [9, 8, 7]]

```
l=[[1, 2, 3], [4, 5, 6], [7, 8, 9]]
for sub in l:
    sub.reverse()
print(l)
```

```
[[3, 2, 1], [6, 5, 4], [9, 8, 7]]
```

append() Function Questions

1- Write a program to append the number 100 to the given list. Input: [10, 20, 30, 40] Output: [10, 20, 30, 40, 100]

```
l= [10, 20, 30, 40]
l.append(100)
print(l)
```

```
[10, 20, 30, 40, 100]
```

2 Write a program to append a string "Hello" to the given list. Input: ['apple', 'banana', 'cherry'] Output: ['apple', 'banana', 'cherry', 'Hello']

```
friuts=['apple', 'banana', 'cherry']
friuts.append('Hello')
print(friuts)
```

```
['apple', 'banana', 'cherry', 'Hello']
```

3 Write a program to append a list [5, 6, 7] as a single element in the given list. Input: [1, 2, 3, 4] Output: [1, 2, 3, 4, [5, 6, 7]]

```
l=[1, 2, 3, 4]
l.append([5,6,7])
print(l)
```

```
[1, 2, 3, 4, [5, 6, 7]]
```

extend() Function Questions

4 Write a program to extend the given list by adding another list [50, 60, 70]. Input: [10, 20, 30, 40] Output: [10, 20, 30, 40, 50, 60, 70]

```
l=[10, 20, 30, 40]
print(l.extend(50, 60, 70))
```

5 Write a program to extend a list of numbers [7, 8, 9] with another list [10, 11, 12]. Input: [7, 8, 9] Output: [7, 8, 9, 10, 11, 12]

```
l=[7, 8, 9]
l.extend([10, 11, 12])
print(l)
```

```
[7, 8, 9, 10, 11, 12]
```

6 Write a program to extend a list of strings ["cat", "dog"] with another list ["lion", "tiger"]. Input: ["cat", "dog"] Output: ["cat", "dog", "lion", "tiger"]

```
Animals=["cat", "dog"]
Animals.extend(["lion", "tiger"])
print(Animals)
```

```
['cat', 'dog', 'lion', 'tiger']
```

pop() Function Questions

7 Write a program to remove the last element from the given list using the pop function. Input: [10, 20, 30, 40] Output: [10, 20, 30]

```
l=[10, 20, 30, 40]
l.pop()
```

```
40
```

8 Write a program to remove the third element from the given list using the pop function. Input: [1, 2, 3, 4, 5] Output: [1, 2, 4, 5]

```
l=[1, 2, 3, 4, 5]
remove_element = l.index(3)   # find index of element
l.pop(remove_element)
print(l)
```

```
[1, 2, 4, 5]
```

9 Write a program to remove the first element from the given list using the pop function. Input: [100, 200, 300, 400] Output: [200, 300, 400]

```
l=[100, 200, 300, 400]
remove_element = l.index(100)   # find index of element
l.pop(remove_element)
print(l)
```

```
[200, 300, 400]
```

remove() Function Questions

10 Write a program to remove the element 20 from the given list. Input: [10, 20, 30, 40, 50] Output: [10, 30, 40, 50]

```
l=[10, 20, 30, 40, 50]
l.remove(20)
print(l)
```

```
[10, 30, 40, 50]
```

11 Write a program to remove the first occurrence of "apple" from the given list. Input: ["banana", "apple", "cherry", "apple"] Output: ["banana", "cherry", "apple"]

```
friuts=["banana", "apple", "cherry", "apple"]
friuts.remove("apple")
print(friuts)
```

```
['banana', 'cherry', 'apple']
```

12 Write a program to remove the number 5 from the given list if it exists. Input: [1, 2, 3, 4, 5, 6] Output: [1, 2, 3, 4, 6]

```
l=[1, 2, 3, 4, 5, 6]
l.remove(5)
print(l)
```

```
[1, 2, 3, 4, 6]
```

index() Function Questions

13 Write a program to find the index of the element 50 in the given list. Input: [10, 20, 30, 40, 50, 60] Output: 4

```
l=[10, 20, 30, 40, 50, 60]
l.index(50)
```

```
4
```

14 Write a program to find the index of "cherry" in the given list. Input: ["apple", "banana", "cherry", "date"] Output: 2

```
friuts= ["apple", "banana", "cherry", "date"]
friuts.index("cherry")
```

```
2
```

15 Write a program to find the index of the number 100 in the given list. If not found, print "Not found". Input: [10, 20, 30, 40] Output: "Not found"

```
l=[10, 20, 30, 40]
n=int(input("ENter the number:"))
if n in l:
  print("Found")
```

```
else:
  print("Not Found")
```

```
ENter the number:45
Not Found
```

count() Function Questions

16 Write a program to count the occurrences of 5 in the given list. Input: [1, 5, 2, 5, 3, 5, 4] Output: 3

```
l= [1, 5, 2, 5, 3, 5, 4]
l.count(5)
```

```
3
```

17 Write a program to count how many times "apple" appears in the given list. Input: ["apple", "banana", "apple", "cherry", "apple"] Output: 3

```
friuts=["apple", "banana", "apple", "cherry", "apple"]
friuts.count("apple")
```

```
3
```

18 Write a program to count the occurrences of 100 in the given list. Input: [10, 20, 30, 40, 50] Output: 0

```
l=[10, 20, 30, 40, 50]
l.count(100)
```

```
0
```

min() and max() Function Questions

19 Write a program to find the minimum value in the given list. Input: [45, 12, 78, 34, 23] Output: 12

```
l=[45, 12, 78, 34, 23]
min(l)
```

```
12
```

20 Write a program to find the maximum value in the given list. Input: [99, 55, 73, 21, 64] Output: 99

```
l=[99, 55, 73, 21, 64]
max(l)
```

```
99
```

🧪 Practical List Questions with Sample Input

Create a list of 5 integers and print it. Sample Input: [1, 2, 3, 4, 5]

```
list=[1,2,3,4,5]
print(list)
```

```
[1, 2, 3, 4, 5]
```

Create an empty list and add three elements to it. Sample Input: 10, 20, 30

```
l=[]
l.extend([10,20,30])
print(l)
```

```
[10, 20, 30]
```

Find the length of a list. Sample Input: [5, 10, 15, 20]

```
l=[5, 10, 15, 20]
len(l)
```

```
4
```

Print the first and last element of a list. Sample Input: [2, 4, 6, 8, 10]

```
l=[2, 4, 6, 8, 10]
first_element,last_element=l[0],l[-1]
#last_element=l[-1]
print("First Element is: ",first_element,"/ Last Element is : ",last_element)
```

```
First Element is:  2 / Last Element is :  10
```

Add an element 50 at the end of the list. Sample Input: [10, 20, 30]

```
l=[10, 20, 30]
l.append(50)
print(l)
```

```
[10, 20, 30, 50]
```

Insert the value 100 at index position 2. Sample Input: [5, 15, 25, 35]

```
l=[5, 15, 25, 35]
l.insert(2,100)
print(l)
```

```
[5, 15, 100, 25, 35]
```

Remove a specific element from the list. Sample Input: List → [10, 20, 30, 40], Element → 20

```
l=[10, 20, 30, 40]
l.remove(20)
print(l)
```

```
[10, 30, 40]
```

Remove the last element from the list. Sample Input: [1, 2, 3, 4]

```
l=[1, 2, 3, 4]
l.pop()
print(l)
```

```
[1, 2, 3]
```

Print all elements of a list using a loop. Sample Input: ["apple", "banana", "mango"]

```
l=["apple", "banana", "mango"]
for element in l:
    print(element)
```

```
apple
banana
mango
```

Check whether an element exists in the list. Sample Input: List → [10, 20, 30, 40], Element → 30

```
l=[10, 20, 30, 40]
```

Replace the second element of a list with 99. Sample Input: [5, 10, 15, 20]

```
l=[5, 10, 15, 20]
l[1]=99
print(l)
```

```
[5, 99, 15, 20]
```

Find the sum of all elements in a list. Sample Input: [1, 2, 3, 4, 5]

```
l=[1, 2, 3, 4, 5]
sum(l)
```

```
15
```

Find the maximum element in a list. Sample Input: [45, 12, 78, 34]

```
l=[45, 12, 78, 34]
max(l)
```

```
78
```

Find the minimum element in a list. Sample Input: [9, 3, 15, 6]

```
l= [9, 3, 15, 6]
min(l)
```

```
3
```

Count how many times an element appears in a list. Sample Input: List → [1, 2, 2, 3, 2, 4], Element → 2

```
l=[1, 2, 2, 3, 2, 4]
l.count(2)
```

```
3
```

Reverse a list. Sample Input: [10, 20, 30, 40]

```
l=[10, 20, 30, 40]
l.reverse()
print(l)
```

```
[40, 30, 20, 10]
```

Sort a list in ascending order. Sample Input: [5, 1, 4, 2, 3]

```
l= [5, 1, 4, 2, 3]
l.sort()
print(l)
```

```
[1, 2, 3, 4, 5]
```

Copy one list into another list. Sample Input: [100, 200, 300]

```
l= [100, 200, 300]
a=l.copy()
print(a)
```

```
[100, 200, 300]
```

Remove all elements from a list. Sample Input: [1, 2, 3, 4, 5]

```
l=[1, 2, 3, 4, 5]
l.clear()
print(l)
```

```
[]
```

Print elements at even index positions. Sample Input: [10, 20, 30, 40, 50, 60]

```
l=[10, 20, 30, 40, 50, 60]
l[1::2]
```

```
[20, 40, 60]
```