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**20 Questions with Lists in Python**

# 1. Create a List of N numbers entered by user

n = int(input("Enter number of elements: "))

lst = []

for i in range(n):

val = int(input(f"Enter element {i+1}: "))

lst.append(val)

print("Created List:", lst)

Enter number of elements: 6

Enter element 1: 4

Enter element 2: 3

Enter element 3: 2

Enter element 4: 5

Enter element 5: 1

Enter element 6: 1

Created List: [4, 3, 2, 5, 1, 1]

# 2. Print First and Last Element of List

print("First element:", lst[0])

print("Last element:", lst[-1])

First element: 4

Last element: 1

# 3. Find Maximum and Minimum in List

print("Maximum:", max(lst))

print("Minimum:", min(lst))

Maximum: 5

Minimum: 1

# 4. Calculate Sum of List Elements

print("Sum of elements:", sum(lst))

Sum of elements: 16

# 5. Search for an Element in List

x = int(input("Enter number to search: "))

if x in lst:

print(x, "found at index", lst.index(x))

else:

print(x, "not found")

Enter number to search: 12

12 not found

# 6. Count Occurrences of an Element

num = int(input("Enter number to count: "))

print("Occurrences of", num, ":", lst.count(num))

Enter number to count: 2

Occurrences of 2 : 1

# 7. Reverse a List

print("Reversed List:", lst[::-1])

Reversed List: [1, 1, 5, 2, 3, 4]

# 8. Sort List in Ascending Order

print("Sorted (Ascending):", sorted(lst))

Sorted (Ascending): [1, 1, 2, 3, 4, 5]

# 9. Sort List in Descending Order

print("Sorted (Descending):", sorted(lst, reverse=True))

Sorted (Descending): [5, 4, 3, 2, 1, 1]

# 10. Remove an Element from List

rem = int(input("Enter element to remove: "))

if rem in lst:

lst.remove(rem)

print("Updated List:", lst)

else:

print("Element not in list")

Enter element to remove: 5

Updated List: [4, 3, 2, 1, 1]

# 11. Insert an Element at a Specific Position

pos = int(input("Enter position (0-based index): "))

val = int(input("Enter value to insert: "))

lst.insert(pos, val)

print("List after insertion:", lst)

Enter position (0-based index): 0

Enter value to insert: 7

List after insertion: [7, 4, 3, 2, 1, 1]

# 12. Slice First 3 Elements

print("First 3 elements:", lst[:3])

First 3 elements: [7, 4, 3]

# 13. Slice Last 3 Elements

print("Last 3 elements:", lst[-3:])

Last 3 elements: [2, 1, 1]

# 14. Find Even Numbers in List

evens = [i for i in lst if i % 2 == 0]

print("Even numbers:", evens)

Even numbers: [4, 2]

# 15. Find Odd Numbers in List

odds = [i for i in lst if i % 2 != 0]

print("Odd numbers:", odds)

Odd numbers: [7, 3, 1, 1]

# 16. Find Squares of List Elements

squares = [i\*\*2 for i in lst]

print("Squares:", squares)

Squares: [49, 16, 9, 4, 1, 1]

# 17. Find Second Largest Element

if len(lst) >= 2:

unique\_lst = list(set(lst))

unique\_lst.sort()

print("Second Largest:", unique\_lst[-2])

else:

print("Not enough elements")

Second Largest: 4

# 18. Remove Duplicates from List

unique = list(set(lst))

print("List without duplicates:", unique)

List without duplicates: [1, 2, 3, 4, 7]

# 19. Concatenate Two Lists

n2 = int(input("Enter number of elements for 2nd list: "))

lst2 = []

for i in range(n2):

val = int(input(f"Enter element {i+1}: "))

lst2.append(val)

combined = lst + lst2

print("Concatenated List:", combined)

Enter number of elements for 2nd list: 6

Enter element 1: 7

Enter element 2: 8

Enter element 3: 7

Enter element 4: 8

Enter element 5: 7

Enter element 6: 8

Concatenated List: [7, 4, 3, 2, 1, 1, 7, 8, 7, 8, 7, 8]

# 20. Find Common Elements Between Two Lists

common = list(set(lst) & set(lst2))

print("Common elements:", common)

Common elements: [7]