Beginner

1. Write a Python program to find the maximum element in a list of numbers without max functions
   numbers = [10, 20, 4, 45, 99]
   The maximum element is: 99

2. Write a Python program to sum all the elements in a list of numbers.
   a. numbers = [10, 20, 30, 40]
   b. The sum of all elements is: 100
3. Write a Python program to reverse a list without reverse or slicing operator
   a. numbers = [1, 2, 3, 4, 5]
   b. Reversed list: [5, 4, 3, 2, 1]
4. Write a Python program to sort a list in ascending order without sort functions
5. Write a Python program to remove duplicates from a list while maintaining the order of elements.
   a. numbers = [1, 2, 2, 3, 4, 4, 5]
   b. List after removing duplicates: [1, 2, 3, 4, 5]
6. Write a Python program to find all pairs of numbers in a list that add up to a specific target sum.
   a. numbers = [1, 2, 3, 4, 3, 5, 6] target_sum = 6
   b. Pairs that add up to 6: [(3, 3), (2, 4), (1, 5)]
7. Write a Python program to flatten a nested list (list within lists) into a single list.
   a. nested_list = [1, [2, 3], [4, [5, 6], 7], 8]
   b. Flattened list: [1, 2, 3, 4, 5, 6, 7, 8]
8. Write a Python program to find the sum of the elements in a list, excluding the largest and smallest element. Don't use max or min functions
   a. numbers = [1, 2, 3, 4, 5]
   b. Sum excluding the largest and smallest element: 9

Intermediate

9. Write a Python program to check if a list is a palindrome (reads the same backward as forward) using two pointer approach
   a. numbers = [1, 2, 3, 2, 1]
   b. True
10. Write a function to remove duplicate elements from a list.
    a. numbers = [1, 2, 3, 2, 4, 5, 1, 6]
    b. [1, 2, 3, 4, 5, 6]
11. Find Common Elements in Two Lists
    a. list1 = [1, 2, 3, 4, 5]
    b. list2 = [3, 4, 5, 6, 7]
    c. Result: [3, 4, 5]
12. Find the Longest Word in a List
    a. words = ["apple", "banana", "strawberry", "kiwi"]
    b. Strawberry

13. Find Missing Number in a List

Advanced

14. Find Missing Number in a List

You are given a list of n-1 numbers in the range 1 to n. One number is missing from the sequence. Find the missing number.
   a. numbers = [1, 2, 4, 5, 6]
   b. 3

15. Find the First Non-Repeating Element

Given a list of integers, find the first element that appears only once.
   a. numbers = [4, 5, 1, 2, 0, 4, 5, 2]
   b. Expected Output: 1

16. Move All Zeros to the End

Given a list of integers, move all zeros to the end while maintaining the relative order of non-zero elements. Don't use any inbuilt functions
   a. numbers = [0, 1, 0, 3, 12]
   b. [1, 3, 12, 0, 0]

17. Find Elements Greater Than Their Left Neighbor
   a. numbers = [1, 3, 2, 6, 5, 8, 7]
   b. [3, 6, 8]

18. Find Triplets That Sum to Zero

Given a list of numbers, find all unique triplets (a, b, c) such that a + b + c = 0.
   a. numbers = [-1, 0, 1, 2, -1, -4]
   b. Expected Output: [(-1, -1, 2), (-1, 0, 1)]