Q1. Reverse a List

Input: [1, 2, 3, 4, 5]

Description: Write a program to reverse the list without using the reverse() function.

Sample Output: [5, 4, 3, 2, 1]

Q2. Find Maximum in a List

Input: [12, 45, 9, 27, 33]

Description: Write a program to find the maximum element in the list using a loop.

Sample Output: 45

Q3. Count Even and Odd Numbers

Input: [10, 21, 4, 45, 66, 93, 11]

Description: Write a program to count how many numbers are even and how many are odd.

Sample Output: Even: 3, Odd: 4

Q4. Merge Two Lists

Input: [1, 2, 3], [4, 5, 6]

Description: Merge the two lists into one.

Sample Output: [1, 2, 3, 4, 5, 6]

Q5. Remove Duplicates from a List

Input: [1, 2, 2, 3, 4, 4, 5]

Description: Remove duplicates using a set.

Sample Output: [1, 2, 3, 4, 5]

Q6. Check if a Key Exists in Dictionary

Input: {"a": 1, "b": 2, "c": 3}, Key = "b"

Description: Write a program to check if the key exists in the dictionary.

Sample Output: True

Q7. Count Word Frequency

Input: "apple banana apple orange banana apple"

Description: Count the frequency of each word using a dictionary.

Sample Output: {'apple': 3, 'banana': 2, 'orange': 1}

Q8. Print Dictionary Keys and Values

Input: {"name": "John", "age": 25, "city": "London"}

Description: Write a program to print keys and values separately.

Sample Output:

Keys: ['name', 'age', 'city']

Values: ['John', 25, 'London']

Q9. Set Operations (Union & Intersection)

Input: set1 = {1, 2, 3}, set2 = {3, 4, 5}

Description: Perform union and intersection of two sets.

Sample Output: Union: {1, 2, 3, 4, 5}, Intersection: {3}

Q10. Print Multiplication Table

Input: 3

Description: Print the multiplication table of 3 up to 10.

Sample Output:

3 x 1 = 3

3 x 2 = 6

...

3 x 10 = 30

--- INTERMEDIATE LEVEL ---

Q11. Find Second Largest Number in a List

Input: [12, 35, 1, 10, 34, 1]

Description: Write a program to find the second largest number without using sort().

Sample Output: 34

Q12. Flatten a Nested List

Input: [[1, 2], [3, 4], [5, 6]]

Description: Write a program to flatten the nested list into a single list.

Sample Output: [1, 2, 3, 4, 5, 6]

Q13. Find All Pairs with a Given Sum

Input: [1, 2, 3, 4, 5, 6], Target = 7

Description: Find all unique pairs of numbers whose sum is equal to the target.

Sample Output: [(1, 6), (2, 5), (3, 4)]

Q14. Dictionary Sorting by Value

Input: {"a": 5, "b": 1, "c": 8, "d": 3}

Description: Sort the dictionary by values in ascending order.

Sample Output: [('b', 1), ('d', 3), ('a', 5), ('c', 8)]

Q15. Intersection of Multiple Sets

Input: set1 = {1, 2, 3, 4}, set2 = {2, 3, 5}, set3 = {2, 3, 6}

Description: Find elements common in all sets.

Sample Output: {2, 3}

Q16. Find Missing Numbers from 1 to N

Input: [1, 2, 4, 6, 7, 9], N = 10

Description: Write a program to find missing numbers between 1 and N.

Sample Output: [3, 5, 8, 10]

Q17. Frequency of Characters in a String

Input: "programming"

Description: Count frequency of each character using a dictionary and print the result.

Sample Output: {'p': 1, 'r': 2, 'o': 1, 'g': 2, 'a': 1, 'm': 2, 'i': 1, 'n': 1}

Q18. Rotate a List by K Elements

Input: [1, 2, 3, 4, 5, 6], K = 2

Description: Rotate the list to the left by K elements.

Sample Output: [3, 4, 5, 6, 1, 2]

Q19. Nested Dictionary Lookup

Input: {"emp1": {"name": "John", "age": 25}, "emp2": {"name": "Sara", "age": 30}}

Description: Write a program to print the age of emp2.

Sample Output: 30

Q20. Find First Non-Repeating Element

Input: [9, 4, 9, 6, 7, 4]

Description: Write a program to find the first element that does not repeat.

Sample Output: 6