1. Program to Convert a String into Mobile Keypad number

Concept:

- A mobile Keypad has letters associated with numbers. For example:
  - 2 -> 'a', 'b', 'c'
  - 3 -> 'd', 'e', 'f'
  - 4 -> g, h, i
  - 5 -> j k l
  - 6 -> m, n, o
  - 7 -> p, q, r, s
  - 8 -> 't', 'u', 'v'
  - 9 -> 'w', 'x', 'y', 'z'
- The task is to Convert a string into the Corresponding number on a mobile Keypad

Algorithm:

1. Create a mapping of letters to their Corresponding numbers
2. Iterate over each character of the string
3. If the character is a letter, find its Corresponding number from the mapping.
4. Append the result to a string.

5. If the character is not a letter (like space or punctuation), keep it as is.

6. Return the final result.

Example :

- Input : "hello"
- Output : "43556"

2. Program to find all Quadruples that Sum to 0

Concept:

- The goal is to find all quadruples (sets of four numbers) in an array whose sum equals zero
- The Problem is Commonly known as the "4 Sum" Problem.

Approach:

1. Sort the array to make searching easier
2. Use two pointers to find pairs that sum to a specific value.
3. Iterate through the array and use two other pointers to find a complementary pair that sums to zero
4. Avoid duplicates by skipping equal elements.

Algorithm:

1. Sort the array
2. For each pair of elements (i, j), treat the remaining two numbers as a subarray and apply the two-pointer technique to find the other two numbers.
3. Ensure the result doesn't contain duplicates
4. Return the quadruples.

Example:

- Input: [-1, 0, 1, 2, -1, -4]
- Output: [[-1, -1, 1, 2], [-1, 0, 0, 1]]