University of London
BSc Computer Science
Mathematics Self-Assignment

Figure 1: Simple Keypad

Question 01
Problem: Letter Combinations of a Phone Number

Given a string containing digits from 2-9 inclusive, return all possible letter combinations that the number could represent. Return the answer in any order.

A mapping of digits to letters (just like on the telephone buttons) is given below. Note that 1 does not map to any letters.

Examples:

- Example 1:
  - Input: digits = "23"
  - Output: ["ad", "ae", "af", "bd", "be", "bf", "cd", "ce", "cf"]
- Example 2:
  - Input: digits = ""
  - Output: []
- Example 3:
  - Input: digits = "2"
  - Output: ["a", "b", "c"]

Constraints:

- $0 \leq digits.length \leq 4$
- $digits[i]$ is a digit in the range ['2', '9'].