Letter phone number

To solve the letter combinations of a phone number problem, you need to generate all possible combinations of letters corresponding to the given digits using a backtracking approach.

Key Concept: Each digit maps to a set of characters, like this:

Digit	2	3	4	5	6	7	8	9
Letters	abc	def	ghi	jkl	mno	pqrs	tuv	wxyz

Your job is to build all combinations by choosing one letter per digit.

Strategy: Backtracking (DFS):

1. Use a map to convert digits to letter strings.
2. Use a recursive function:
   - Base case: if the current combination's length == digits length → add it to result
   - Recursive step: for each letter that matches the current digit, add it to the path and recurse.
3. Collect all valid combinations into a vector.

Edge Case: If the input string is empty → return an empty vector.

Example: For digits = "23":

'2' → 'abc'

'3' → 'def'

Build combinations by picking one letter from each set:

'ad', 'ae', 'af', 'bd', 'be', 'bf', 'cd', 'ce', 'cf'