017. Letter Combinations of a Phone Number

017 Letter Combinations of a Phone Number

• BackTracking

Description

Given a digit string, return all possible letter combinations that the number could represent.

A mapping of digit to letters (just like on the telephone buttons) is given below.



```
Input:Digit string "23"
Output: ["ad", "ae", "bd", "be", "bf", "cd", "ce", "cf"].
```

Note

Although the above answer is in lexicographical order, your answer could be in any order you want.

1. Thought line

2. BackTracking

```
1 class Solution {
2 public:
3
     vector<string> letterCombinations(string digits) {
4
     vector<string> result;
     if(digits.empty()) return vector<string>();
5
     6
7
8
    result.push_back(""); // add a seed for the initial case
     for(int i = 0; i < digits.size(); ++i) {</pre>
10
11
           int num = digits[i]-'0';
         if(num < 0 || num > 9) break;
12
13
14
           const string& candidate = v[num];
         if(candidate.empty()) continue;
15
16
17
         vector<string> tmp;
18
           for(int j = 0; j < candidate.size(); ++j) {
19
            for(int k = 0 ; k < result.size() ; ++k) {</pre>
                 tmp.push_back(result[k] + candidate[j]);
20
21
23
           result.swap(tmp);
24
25
      return result;
```