Implement a Phone Directory Suggestions [CodeStudio](https://www.codingninjas.com/studio/problems/implement-a-phone-directory_1062666?leftPanelTabValue=PROBLEM)

You are given a list/array of strings which denotes the contacts that exist in your phone directory. The search query on a string ‘str’ which is a query string displays all the contacts which are present in the given directory with the prefix as ‘str’. One special property of the search function is that when a user searches for a contact from the contact list then suggestions (contacts with prefix as the string entered so for) are shown after the user enters each character.>

Example: str = [“cod”, “coding”, “codding”, “code”, “coly”], query: “coding”

Output: [[“cod”, “coding”, “codding”, “code”, “coly”], [“cod”, “coding”, “codding”, “code”, “coly”], [“cod”, “coding”, “codding”, “code”], [“coding”], [“coding”], [“coding”]]

**Approach 1: Function to get suggestions from a phone directory using Trie**

* **Classes:**
  + **TrieNode**: Represents a node in the Trie.
  + **Trie**: Represents the Trie data structure and includes functions for insertion and suggestion retrieval.
* **Functions:**
  + **insert**: Inserts a word into the Trie.
  + **printSuggestions**: Recursively prints suggestions starting from a given node.
  + **getSuggestions**: Retrieves suggestions for a given query string.
  + **phoneDirectory**: Main function to get suggestions from a phone directory using Trie.
* **Explanation:**
  + Inserts each contact from the contact list into the Trie.
  + For a given query string, traverses the Trie based on the characters in the query.
  + Retrieves suggestions at each character position.
  + Returns suggestions for each prefix of the query string.
  + If a prefix does not match any contact, returns "No Suggestions Found."
* **Time Complexity:**
  + **O(N \* (W^2)), where N is the number of elements in the given array/list and W is the average length of the string.**
* **Space Complexity:**
  + **O(N \* W), where N is the number of elements in the given array/list and W is the average length of the string.**