**[Phone directory](https://practice.geeksforgeeks.org/problems/phone-directory4628/1)**

Given a list of contacts **contact[]** of length **n** where each contact is a string which exist in a phone directory and a query string **s**. The task is to implement a search query for the phone directory. Run a search query for each prefix **p** of the query string **s**(*i.e.* from  index 1 to |s|) that prints all the distinct contacts which have the same prefix as p in **lexicographical increasing order**. Please refer the explanation part for better understanding.  
**Note:**If there is no match between query and contacts, print "0".

**Example 1:**

**Input:**

n = 3

contact[] = {"geeikistest", "geeksforgeeks",

"geeksfortest"}

s = "geeips"

**Output:**

geeikistest geeksforgeeks geeksfortest

geeikistest geeksforgeeks geeksfortest

geeikistest geeksforgeeks geeksfortest

geeikistest

0

0

**Explaination:** By running the search query on

contact list for "g" we get: "geeikistest",

"geeksforgeeks" and "geeksfortest".

By running the search query on contact list

for "ge" we get: "geeikistest" "geeksforgeeks"

and "geeksfortest".

By running the search query on contact list

for "gee" we get: "geeikistest" "geeksforgeeks"

and "geeksfortest".

By running the search query on contact list

for "geei" we get: "geeikistest".

No results found for "geeip", so print "0".

No results found for "geeips", so print "0".

**Your Task:**  
Youd do not need to read input or print anything. Your task is to complete the function **displayContacts()** which takes **n, contact[ ]**and**s** as input parameters and returns a list of list of strings for required prefixes. If some prefix has no matching contact return "0" on that list.

**Expected Time Complexity:** O(|s| \* n \* max|contact[i]|)  
**Expected Auxiliary Space:** O(n \* max|contact[i]|)

**Constraints:**  
1 ≤ T ≤ 100, T = number of test cases  
1 ≤ n ≤ 50  
1 ≤ |contact[i]| ≤ 50  
1 ≤ |s| ≤ 6