

Phone directory

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
```

Explanation: 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:

You 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: $O(|s| * n * \max|\text{contact}[i]|)$

Expected Auxiliary Space: $O(n * \max|\text{contact}[i]|)$

Constraints:

$1 \leq T \leq 100$, T = number of test cases

$1 \leq n \leq 50$

$1 \leq |\text{contact}[i]| \leq 50$

$1 \leq |s| \leq 6$