

Military Institute of Science and Technology
B.Sc. in Computer Science and Engineering
Assignment (Week-5), Fall 2021

Subject: CSE-216, Data Structures and Algorithms-II Sessional

Q-1

10

A supershop uses an UMS (User Management System) to store the email IDs of their users as user information. The format of an email ID is known to all. It starts with a string ***u*** which denotes the username and then contains another string ***d*** that denotes the domain. ***d*** always contains “.com” as a suffix. ***u*** and ***d*** are separated by a ‘@’. Example of an email ID is “sinchimree@gmail.com” where

- Username, ***u*** = “ sinchimree”
- Domain, ***d*** = “gmail.com”

The manager of the supershop is recently very worried because the UMS is getting slower day by day in the retrieval of data with the increase of the number of users. So the manager is planning to set a new UMS for his supershop and requested you to develop a new UMS with a fast retrieval rate which doesn’t depend on the number of users. You know that for this type of scenario TRIE-implementation provides the best performance.

The supershop frequently deals with 2 types of operations

- Inserting an email ID into the database
- Searching all the email IDs stored in the database with a given domain ***d***

Now your task is to develop a UMS for the supershop using TRIE that inserts ***n*** number of email IDs in the database and displays all the email IDs stored in the database for a given domain ***d*** to answer a query.

Input

First line of input contains an integer ***n*** that denotes the number of users. Next ***n*** lines of input contain an email ID ***e*** in the described format. After that an integer ***q*** is given as input denoting the number of queries. Each query contains a string ***d*** denoting the domain of an email ID.

Constraints

- ***e*** and ***d*** consists of lowercase letters, ‘@’ and ‘.’ (dot)
- You can safely assume that all the email IDs stored in the database are unique

Output

For each query print the email IDs separated by a single space in any order stored in the database that have ***d*** as domain. If no such email ID is found then print “No result found”. You must print the query number while answering a query. See the sample input output section for clarification.

Sample Input Output

Input	Output
6 nurshatfateh@gmail.com ghoshbijoya@hotmail.com nuraianahrin@yahoo.com kabiralisha@gmail.com rashidulislam@gmail.com enankhan@yahoo.com	Query-1: nurshatfateh@gmail.com kabiralisha@gmail.com rashidulislam@gmail.com
4 gmail.com outlook.com yahoo.com hotmail.com	Query-2: No result found
	Query-3: enankhan@yahoo.com nuraianahrin@yahoo.com
	Query-4: ghoshbijoya@hotmail.com