Q.1. You are working on a simple contact management program in Java. Your program allows users to add and search for contacts by their names. For the search functionality, you decide to use the linear search algorithm to find a contact's details based on their name.

You have a list of contacts represented by a custom Contact class with attributes 'name', 'phoneNumber', and 'email'. You also have an array of these Contact objects called contactsArray, which holds all the contacts in the system.

Your task is to implement the linear search algorithm to find a contact's details by their name. If the contact is found, return the contact's information; otherwise, return a message indicating that the contact does not exist in the list.

Sample input

2

xyz 9999999999 xyz@gmail.com

sagar 9988776644 sagar@gmail.com

xyz

Sample output

xyz

9999999999

xyz@gmail.com

Q.2. You are developing a music playlist application in Java, and you want to implement a search functionality to quickly find a song in an array of song names.

Your task is to implement the search algorithm to find a song's position in the array. If the song is found, return its index; otherwise, return -1 to indicate that the song does not exist in the playlist.

Input

Number of Songs: 5

Songs_List: Jai_Ho Mera_Mann Sakhiyaan Laare Rockon

Searching_Song : Mera_Mann

Output

1

Comparing all the song in PlayList with the target song name (Mera_Mann).

Mera_Mann found at index 1, Since they match, Algorithm will return 1 as the

result.

Q.3. You work as a software developer for a travel agency that offers various travel packages to customers. The agency has different travel destinations and activities available for each destination. To provide a personalized experience, the agency wants to generate all possible combinations of travel packages for their customers. To achieve this, you decide to implement a Java program that generates all possible subarrays from a given array of travel packages. Each subarray will represent a combination of travel packages, and it will include the destinations

and activities available at those destinations. Write a C++ program that takes an array of travel packages as input and generates all possible subarrays from the given list. Each subarray should represent a unique combination of travel packages, and you need to print all the generated combinations.

Sample input

87 65 45 12

Sample output

87

87 65

87 65 45

87 65 45 12

65

65 45

65 45 12

45

45 12

12

Q.4. You are working on a language processing tool, and your task is to analyze the character frequency in different texts. You need to write a function that takes a text string as input and prints the frequency of each character in alphabetical order.

Sample:

Input: Hello, World!

Output: H1e1l2o1,1 1W1o1r1l1d1!1

Q.5. You are developing a Java program for text analysis, and you need to test the function that generates all possible substrings from a given string. The program should handle different input strings and provide the corresponding substrings.

Sample:

Input: abc

Output:

a

b

c

ab

bc

abc

Q.6. You are a software developer working on a text processing application. Your task is to implement a function that takes a string str and an array of indices chars[], where each index corresponds to a position in the original string. Your goal is to insert a star (*) before the character at each specified index and return the modified string.

Sample:

Input: HelloWorld

1 4 7

Output: H*ell*o*Wo*rld