This challenge is part of a tutorial track by MyCodeSchool

Given pointers to the heads of two sorted linked lists, merge them into a single, sorted linked list. Either head pointer may be null meaning that the corresponding list is empty.

Example

$headA$ refers to $1 \rightarrow 3 \rightarrow 7 \rightarrow NULL$

$headB$ refers to $1 \rightarrow 2 \rightarrow NULL$

The new list is $1 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow 7 \rightarrow NULL$

Function Description

Complete the mergeLists function in the editor below.

mergeLists has the following parameters:

- SinglyLinkedListNode pointer headA: a reference to the head of a list
- SinglyLinkedListNode pointer headB: a reference to the head of a list

Returns

- SinglyLinkedListNode pointer: a reference to the head of the merged list

Input Format

The first line contains an integer t, the number of test cases.

The format for each test case is as follows:

The first line contains an integer n, the length of the first linked list.

The next n lines contain an integer each, the elements of the linked list.

The next line contains an integer m, the length of the second linked list.

The next m lines contain an integer each, the elements of the second linked list.

Constraints

- $1 \leq t \leq 10$
- $1 \leq n, m \leq 1000$
- $1 \leq list[i] \leq 1000$, where $list[i]$ is the i^{th} element of the list.

Sample Input

```
1
3
1
2
3
2
3
4
```

Sample Output

```
1 2 3 3 4
```

Explanation

The first linked list is: $1 \rightarrow 3 \rightarrow 7 \rightarrow NULL$

The second linked list is: $3 \rightarrow 4 \rightarrow NULL$

Hence, the merged linked list is: