Victory Day Dictionary

Tomorrow is your Victory day. In 1971 we get independenence from Pakistan. The war broke out on 26 March 1971, when the Pakistani Army launched a military operation called Operation Searchlight against Bengali civilians, students, intelligentsia and armed personnel, who were demanding that the Pakistani military junta accept the results of the 1970 first democratic elections of Pakistan, which were won by an eastern party, or to allow separation between East and West Pakistan.

For Victory Day joy now all place of Bangladesh playing Song like:

> Salam salam hazar salam, shat sagor rakter binimoye.
> Banglar sadinata anlo zara.
> Amra tomader vulbo Na.
> Akbar jete dena amar sorto somar gai

Any many more.

Your task is to make a simple dictionary from the song.

You will be given a paragraph. It is guaranteed that no punctuation symbol will be given in the input except dot "." and there will be only one space between words.

Input

The first line of input is a integer T representing the number of test cases (T ≤ 10). Each test case begins with a number N represents the number of lines of song in that test case. (1 ≤ N ≤ 10).

Then N lines there is a text S. (1 ≤ |S| ≤ 10000).

Output

Output each word found in the paragraph only once in a lexicographical order. See the sample input output for clarity.

Example

Input:
2
1
salam salam hazar salam.
3
shat sagor rakter binimoye.
banglar sadinata anlo zara.
amra tomader vulbo na.

Output:
Case #1:
hazar
salam
Case #2:
amra
anlo

banglar
binimoye
na
rakter
sadinata
sagor
shat
tomader
vulbo
zara