



Утегенов Батырхан Елембетұлы [ADS-Lab-02]: Submit a solution

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Submit a solution for K-One-time guests

Time limit: 1 s

Real time limit: 5 s

Memory limit: 256M

Problem K: One-time guests

Jojo given an input stream of N characters consisting only of lowercase latin letters. After each input character, output first (or leftmost) non-repeating character. The task is to find the first (or leftmost) non-repeating character each time a character is inserted to the stream. If no non-repeating element occur, then print -1. Help Jojo to solve this problem.

Input format

The first line of input contains an integer T denoting the no of test cases. Then T test cases follow. Each test case contains an integer N denoting the size of the stream. Then in the next line are x characters which are inserted to the stream. Constraints: $1 \leq T \leq 200$ $1 \leq N \leq 500$

Output format

For each test case in a new line print the first non repeating element for each new character added to stream, separated by the spaces. If no non-repeating element occur print -1.

Examples

Input

```
2
4
a a b c
3
a a c
```

Output

```
a -1 b b
a -1 c
```

Input

```
1
6
a d b c a a
```

Output

```
a a a a d d
```

Submit a solution

Language: g++ - GNU C++ 11.4.0

File

Choose FileNo file chosen

Send!

Send!

Previous submissions of this problem

Run ID	Time	Size	Problem	Language	Result	Failed test	View source	View report
1504	538:37:09	1629	K	g++	OK	N/A	View	View

- A
- B
- C
- D
- E
- F
- H
- I
- K
- L

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