B. Following the String

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Polycarp lost the string s of length n consisting of lowercase Latin letters, but he still has its *trace*.

The *trace* of the string s is an array a of n integers, where a_i is the number of such indices j ($j < i$) that $s_i = s_j$. For example, the *trace* of the string `abracadabra` is the array $[0, 0, 0, 1, 0, 2, 0, 3, 1, 1, 4]$.

Given a *trace* of a string, find **any** string s from which it could have been obtained. The string s should consist only of lowercase Latin letters `a-z`.

Input

The first line of the input contains a single integer t ($1 \le t \le 10^4$) — the number of test cases. Then the descriptions of the test cases follow.

The first line of each test case contains a single integer n ($1 \le n \le 2 \cdot 10^5$) — the length of the lost string.

The second line of each test case contains n integers $a_1, a_2, \ldots, a_n$ ($0 \le a_i < n$) — the *trace* of the string. It is guaranteed that for the given *trace*, there exists a suitable string s.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$.

Output

For each test case, output a string s that corresponds to the given *trace*. If there are multiple such strings s, then output any of them.

The string s should consist of lowercase Latin letters `a-z`.

It is guaranteed that for each test case, a valid answer exists.

Example

input Copy

```
5
11
0 0 0 1 0 2 0 3 1 1 4
10
0 0 0 0 0 1 0 1 1 0
1
0
8
0 1 2 3 4 5 6 7
8
0 0 0 0 0 0 0 0
```

output Copy

```
abracadabra
codeforces
a
```

```
aaaaaaaa
dijkstra
```