Sign-up Registration System

Your task is to write a registration system for coordinating sign-ups. The system works in the following way. Every user has a preferred login l_i. The system finds the first free login considering possible logins in the following order: $l_i, \; l_i 0, \; l_i 1, \; l_i 2, \; ...$ (*you check l_i first; in case it is already assigned, you pick the smallest non-negative integer x such that concatenation of l_i and the integer notation of x gives you an available login*) and register a user with this login in the system. After the registration this login becomes assigned.

You have the preferred logins for the n users in chronological order. For each user you have to find a login which he will use in the system.

Input
The first line contains a single integer n ($1 \le n \le 2 * 10^5$) denoting the number of users.

Then follow n lines. The i-th of these lines contains l_i - the preferred login for i-th user. l_i is a non-empty string with lowercase English letters and digits.

Guaranteed that the sum of lengths of l_i is not greater than 10^6.

Output
Print n lines. The i-th of these lines should contain the assignedlogin for the i-th user.

Sample Input
```
4
lebron
lebron0
lebron1
lebron
```

Sample Output
```
lebron
lebron0
lebron1
lebron2
```