Digit Longest Increasing Subsequences 2 Problem Code: **LISDIGIT**

Recently Chef learned about Longest Increasing Subsequence. To be precise, he means longest **strictly** increasing subsequence, when he talks of longest increasing subsequence. To check his understanding, he took his favorite **n**-digit number and for each of its **n** digits, he computed the length of the longest increasing subsequence of digits ending with that digit. Then he stored these lengths in an array named **LIS**.

For example, let us say that Chef's favourite **4**-digit number is **1531**, then the **LIS** array would be **[1, 2, 2, 1]**. The length of longest increasing subsequence ending at first digit is **1** (the digit **1** itself) and at the second digit is **2** (**[1, 5]**), at third digit is also **2** (**[1, 3]**), and at the **4**th digit is **1** (the digit **1** itself).

Now Chef wants to give you a challenge. He has a valid **LIS** array with him, and wants you to find any **n**-digit number having exactly the same **LIS** array? You are guaranteed that Chef's **LIS** array is valid, i.e. there exists at least one **n**-digit number corresponding to the given **LIS** array.

Input

The first line of the input contains an integer **T** denoting the number of test cases.

For each test case, the first line contains an integer **n** denoting the number of digits in Chef's favourite number.

The second line will contain **n** space separated integers denoting **LIS** array, i.e. $\mathbf{LIS_1}$, $\mathbf{LIS_2}$, ..., $\mathbf{LIS_n}$.

Output

For each test case, output a single **n**-digit number (without leading zeroes) having exactly the given **LIS** array. If there are multiple **n**-digit numbers satisfying this requirement, any of them will be accepted.

Constraints

- **1 ≤ T ≤ 30 000**
- **1 ≤ n ≤ 9**
- It is guaranteed that at least one **n**-digit number having the given **LIS** array exists

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Example

Input:

```
5

1

1
```

```
2

1 2

2

1 1

4

1 2 2 1

7

1 2 2 1 3 2 4
```

Output:

```
7

36

54

1531

1730418
```

Explanation

Example case 1. All one-digit numbers have the same **LIS** array, so any answer from **0**to **9** will be accepted.

Example cases 2 & 3. For a two digit number we always have $\mathbf{LIS_1 = 1}$, but the value of $\mathbf{LIS_2}$ depends on whether the first digit is strictly less than the second one. If this is the case (like for number **36**), $\mathbf{LIS_2 = 2}$, otherwise (like for numbers **54** or **77**) the values of $\mathbf{LIS_2}$ is **1**.

Example case 4. This has already been explained in the problem statement.

Example case 5. 7-digit number **1730418** has **LIS** array **[1, 2, 2, 1, 3, 2, 4]**:

index	LIS	length
1	1730418	1

2	1730418	2
3	1730418	2
4	1730418	1
5	1730418	3
6	1730418	2
7	1730418	4