Problem F. Longest Strictly Increasing Sequence

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

Given an array b of length n, find an array a of length n such that, for each $1 \le i \le n$, the length of the longest strictly increasing subsequence of $[a[1], a[2], \cdots, a[i]]$ is equal to $b[i]$.

For an array c of length m, a subsequence $c[i_1], c[i_2], \cdots, c[i_k]$ where $1 \le i_1 < i_2 < \cdots < i_k \le m$ is called strictly increasing if $c[i_1] < c[i_2] < \cdots < c[i_k]$.

Input

The first line contains a single integer T, denoting the number of test cases.

Each test case contains two lines:

- First line contains n - the size of array b.
- Second line contains n space-separated integers where the i-th integer represents $b[i]$.

Constraints

- $1 \le T \le 4\,000$
- $1 \le n \le 10$
- $1 \le b[i] \le 10$
- $1 \le$ sum n of all tests in a testfile $\le 20\,000$
- $1 \le a[i] \le 100$

Output

For each test case, print `YES` if there exists an array a that satisfies the conditions, `NO` otherwise on a new line.

If `YES`, print n space-separated integers representing elements of the array a in a new line.

Example

standard input	standard output
2 6 1 2 3 2 5 7 2 1 2	NO YES 1 2

Note

In the first test case, we can prove that no array exists which satisfies the condition.

In the second test case, $[4, 9]$ satisfies all conditions. LIS of $[4]$ is $[4]$ and its length is 1, and LIS of $[4, 9]$ is $[4, 9]$ and its length is 2. Other acceptable answers include $[5, 20]$ and $[25, 26]$. On the other hand, $[5, 5]$ and $[10, 5]$ are incorrect answers.