

Problem E – Minecraft Randomizer

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

Arthur and Mark have been playing Minecraft together. After first beating the game in 16 minutes and 28 seconds, they have built a house, found diamonds, and filled several chests with all sorts of different blocks they will probably never use. Arthur thinks it is time to try something different.

He proposes a Randomizer that changes what blocks give when broken. Breaking stone might give dirt, breaking dirt might give glass, and breaking glass might give diamonds. Mark agrees to give it a try. Normally, a Randomizer would choose these block drops at random, but Arthur and Mark have a few ideas of their own. They decide to choose what each block drops themselves.

Their game contains n block types, numbered from 1 to n . For each block type i , they must choose a block type b_i . Whenever a player breaks a block of type i , they receive exactly one block of type b_i . These rules are fixed: breaking any block of the same type always gives the same result. Note that a block may give another block of its own type, so $b_i = i$ is allowed. After all, plenty of blocks already do this in regular Minecraft!

Arthur and Mark imagine a player logging into their world with exactly one block. The player could place that block, break it, and collect whatever it drops, then keep repeating this process to see what else they can find. They define the **interestingness** of a starting block type as the number of distinct block types the player can obtain this way, including the starting type itself.

They want some blocks to lead to lots of different discoveries, while others should stay simple. They have decided that each block type i should have interestingness a_i , but choosing what each block should drop to make this happen is harder than they expected.

Help Arthur and Mark choose the block drop types $b_1, b_2, \dots, b_n$ so that the interestingness of every block type i is exactly a_i , or determine that this is impossible.

Input

The first line contains an integer n ($1 \leq n \leq 100$), the number of block types.

The second line contains n integers $a_1, a_2, \dots, a_n$ ($1 \leq a_i \leq n$), where a_i is the required interestingness of block type i .

Output

If no suitable assignment of block drops exists, output **NO**.

Otherwise, output **YES** on the first line. On the second line, output n integers $b_1, b_2, \dots, b_n$ ($1 \leq b_i \leq n$), where b_i is the block type obtained by breaking a block of type i .

If there are multiple valid answers, output any of them.

Examples

standard input	standard output
4 1 2 3 2	YES 1 1 2 1
2 1 1	YES 1 2

Note

In the first sample, block type 3 must have interestingness 3. With the chosen assignment of block drops, starting with a block of type 3 and repeatedly placing and breaking it yields the sequence of block types

$3 \rightarrow 2 \rightarrow 1 \rightarrow 1 \rightarrow 1 \rightarrow \dots$. The player can obtain exactly three distinct block types: 3, 2, and 1, including the starting type, as required.

Starting with block type 1 yields the sequence $1 \rightarrow 1 \rightarrow 1 \rightarrow \dots$. The player encounters only one distinct block type, so its interestingness is 1, as required.