

Longest Increasing Subsequence Path

Given an $N \times N$ matrix of integers, find the longest increasing subsequence path. The path starts at any cell and moves to adjacent cells (up, down, left, right) such that the values are strictly increasing. Return the length of the longest path.

Input

The first line contains an integer N ($1 \leq N \leq 10$). The next N lines each contain N integers representing the matrix elements ($1 \leq \text{value} \leq 100$).

Output

Output a single integer representing the length of the longest increasing subsequence path.

Input	Output
2 1 2 3 4	4
3 1 2 3 4 5 6 7 8 9	9
3 1 2 1 4 3 2 5 6 3	5

- Constraints:
- Time limit: 1000 ms
 - Memory limit: 64 MB