An undirected, unweighted graph is given. It must be determined whether it is a tree.

The first line of the input contains one natural number N ($N \leq 100$) – the number of vertices in the graph. Next, in N rows along N numbers, is the graph adjacency matrix: in the i-th row, at the j-th place, there are 1 if the vertices i and j are connected by an edge, and 0 if there is no edge between them. Zeros are on the main diagonal of the matrix. The matrix is symmetrical with respect to the main diagonal.

Print **YES** if the graph is a tree, **NO** otherwise.

Sample input 1:
6
0 1 1 0 0 0
1 0 1 0 0 0
1 1 0 0 0 0
0 0 0 0 1 0
0 0 0 1 0 0
0 0 0 0 0 0

Sample output 1:
YES

Sample input 2:
3
0 1 0
1 0 1
0 1 0

Sample output 2:
NO