Problem 2:

Given an undirected graph print the order in which the nodes will be visited in a Depth First Search. Begin from vertex 0 and at each step visit the smallest vertex first.

If the graph is on n vertices, the vertex set is from *{0,..,n-1}*. The input graph is given in adjacency list format. The first line of the input specifies n^2 the number of vertices. The second line onwards, in each line, till we see the character '#', it denotes the neighbors of the first vertex (i.e. 0). Assume that the neighbors of vertices are given in sorted format according to the vertex index. After the first '#', from the next line onwards till another '#' is seen, it denotes the neighbors of the second vertex(i.e. 1), and so on.

NOTE: If the node does not have the adjacent vertex then there will be consecutive '#'

Constraints

$0 \leq n \leq 100$

Sample Input:

5
2
3
#
4
#
0
3
#
0
2
#
1
#

Sample Output:

0 2 3 1 4