Miracle Corporations has a number of system services running in a distributed computer system which is a prime target for hackers. The system is basically a set of $N$ computer nodes with each of them running a set of $N$ services. Note that, the set of services running on every node is same everywhere in the network. A hacker can destroy a service by running a specialized exploit for that service in all the nodes.

One day, a smart hacker collects necessary exploits for all these $N$ services and launches an attack on the system. He finds a security hole that gives him just enough time to run a single exploit in each computer. These exploits have the characteristic that, its successfully infects the computer where it was originally run and all the neighbor computers of that node.

Given a network description, find the maximum number of services that the hacker can damage.

## Input

There will be multiple test cases in the input file. A test case begins with an integer $N(1 \leq N \leq 16)$, the number of nodes in the network. The nodes are denoted by 0 to $N-1$. Each of the following $N$ lines describes the neighbors of a node. Line $i(0 \leq i<N)$ represents the description of node $i$. The description for node $i$ starts with an integer $m$ (Number of neighbors for node $i$ ), followed by $m$ integers in the range of 0 to $N-1$, each denoting a neighboring node of node $i$.

The end of input will be denoted by a case with $N=0$. This case should not be processed.

## Output

For each test case, print a line in the format, 'Case $X: \quad Y^{\prime}$, where $X$ is the case number $\& Y$ is the maximum possible number of services that can be damaged.

## Sample Input

3
212
202
201
4
11
10
13
12
0

## Sample Output

Case 1: 3
Case 2: 2

