

Problem D. Dictator

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

Dictator Nu I has a kingdom consisting of n cities. He has planned the transportation of the kingdom. Every pair of cities has exactly a one-way road.

He wants develop this kingdom from one city to one city.

Dictator now is considering developing the city w . And he hopes that for every city u he has developed, there is a one-way road from u to w , or there are two one-way roads from u to v , and from v to w , where city v has been developed before.

He gives you the map of the kingdom. Hope you can give a proper order to develop this kingdom.

Input

There are no more than 90 test cases, terminated by a line '0'.

For each test case, the first line contains an integer n ($1 \leq n \leq 500$).

The following are n lines, the i -th line contains a string consisting of n characters. If the j -th characters is 1, there is a one-way road from city i to city j .

Cities are labelled from 1.

Output

If there is no solution just output "-1". Otherwise output n integers representing the order to develop this kingdom. If there are multiple solutions, print any of them.

Example

standard input	standard output
3 011 001 000 0	1 2 3