7140 Seat Arrangement

Google is one of the most secret and interesting company. There are many new technology that you were never seen. Today, I would like to introduce one of them which was widely used in the office.

How are the seats in your classroom? I guess it's all put on the ground and arrange as a rectangle. We have totally different seats. Our seats can float in the space and keep static at any position. You can imagine a $n \times n \times n$ cube divided into $1 \times 1 \times 1$ cube. There is one seat in each cube. This invention could save much space and looks really fancy.

Let's define the seat at position (i, j, k) to be the seat in the cube at i-th layer j-th row and k-th column. All the indexes are starting from 1.

Now there is a new manager on board and his direct reports are sittng somewhere. He woulld like to move them together in order to help them communicate more often. Formally, it means to move them into a connected component. 2 seats are direct connected if their container cube share one surface. Only sharing an edge or point does not count as a direct connection. In other words, 2 seats at positon (x_1, y_1, z_1) and (x_2, y_2, z_2) are direct connected if $|x_1 - x_2| + |y_1 - y_2| + |z_1 - z_2| = 1$. However there is a critical flaw in the seats. It's really expensive to move personal items between the seats. One move action can only movo a person from one seat to a neighbor seat. 2 seats are neighbors if they direct connected.

Luckily, the manager has some budget that can do at most 200,000 move actions. Help him to find out a solution. If there exists more than one solution, any solution is ok for the manager.

Input

The first line of the input gives the number of test cases, T. T test cases follow. Each test case starts with a number n, the size of the whole cube. Follow with n blocks. Each block consist of n lines of n characters. This represents the original position of the direct reports. The k-th character of j-th line of i-th block represent the seat at position (i, j, k) it's '`0`' if the seat is empty, or '`1`' if there is one of the direct report sitting there.

Output

For each test case, first output one line containing '`Case #`x`:` y', where x is the test case number (starting front 1) and y is the number of moves of your solution. If you can't finish the arrangement within 200,000 moves, output y as '`-1`' instead. If you can finish the arrangement, y lines follow. Each line containing six integers x_1, y_1, z_1, x_2, y_2, z_2 which means you move the person from seat position (x_1, y_1, z_1) to seat position (x_2, y_2, z_2). These 2 positions must be neighbors.

Limits:
$1 \leq T \leq 100$
$1 \leq N \leq 50$

Official clarification: Seats are large enough to hold all the personal items, so when moving from seat 1 to seat 2, seat 2 doesn't have to be empty (it can even hold more than one person's items). However, after the whole process is done, no two people can share the same seat.

Sample Input

```
1
2
```

```
00
10
01
00
```

Sample Output

```
Case #1: 2
1 2 1 1 1 1
1 1 1 1 1 2
```