

# Find The Operations

You are given a square grid of size N, with rows numbered from 0 to N - 1 starting from the top and columns numbered from 0 to N - 1 starting from the left.

A cell (u, v) refers to the cell that is on the  $u^{\text{th}}$  row and the  $v^{\text{th}}$  column. Each cell contains an integer - 0 or 1. You can pick any cell and flip the number in all the cells (including the picked cell) within the Manhattan distance D from the picked cell. A flip here means changing the number from 0 to 1 and vice-versa. The manhattan distance from the cell (u, v) to the cell (x, y) is equal to  $|u - x| + |v - y|$  where  $|i|$  is the absolute value of i.

Your mission is to change all values in the grid to zero without using more than N×N flips.

## Input Format

The first line of the input contains two integers N and D separated by a single space. Each line in the next N lines contains N integers separated by a single space which are either 0 or 1. the  $i^{\text{th}}$  number on the  $j^{\text{th}}$  line is the number on the cell (i - 1, j - 1) of the grid.

## Constraints

$1 \leq N \leq 20$   
 $0 \leq D \leq 40$

## Output Format

If there is no solution, your output should contain exactly a single string "Impossible" (without quotes). If a solution exists, print out the string "Possible" (without quotes) in the first line of your output. In the second line, print out an integer M which represent the number of operations that you need. Each line in the next M lines should contain a pair of integers separated by a single space representing the cell that you picked for the corresponding operation. Note that if there is more than one solution you can pick any one of them.

## Sample Input:#00

```
3 1
0 1 0
1 1 1
0 1 0
```

## Sample Output:#00

```
Possible
1
1 1
```

## Sample Input:#01

```
3 2
1 0 1
1 1 0
0 0 0
```

## Sample Output:#01

```
Impossible
```

## Explanation

In the first testcase, we can perform the first operation in the center cell, this will flip all the elements to 0 within 1 manhattan distance.

In the second testcase, we cannot make it an all 0 matrix under 9 moves. Hence, Impossible.