Binary Matrices

Binary matrices

Help IBM puzzlemaster to test answers to January's 2014 challenge (http://domino.research.ibm.com/Comm/wwwr_ponder.nsf/Challenges/January2014.html).

Input

First line: **N, M** , the size of the matrix (1<=N<100 and 1<=M<=10).
Next **N** lines: **M** bits in each line.
Note: Please pay attention to the different limits (for N and M) used in this challenge as opposed to the IBM challenge and to the fact that in this challenge the input consists of N * M integers while the sample matrix at IBM website has N strings with M digits.

Output

In the first line of the output, the number of errors **K** should be printed.
Then **K** lines should follow, listing all errors.
At first all type 1 errors should be reported in the format:
i1=row_index
then type 2 errors should be reported in the format:
i1=row_index_1 i2=row_index_2
sorted in lexicographical order.
(please note the single space character between the row_index_1 and i2)

If there are no errors, the program should output 0.

Note 1: The row indices are assumed to start from value 1.
Note 2: There is a newline character at the end of the last line of the output.

Sample Input 1

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

Sample Output 1

```
0
```

Sample Input 2

```
5 3
0 0 0
0 1 0
1 1 1
0 1 1
0 0 1
```

Sample Output 2

```
1
i_1=1
```