

# Binary Matrices

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## Binary matrices

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

### Input

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First line: **N**, **M**, the size of the matrix ( $1 \leq N < 100$  and  $1 \leq M \leq 10$ ).

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

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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

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

### Sample Output 1

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0

# Sample Input 2

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

# Sample Output 2

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2  
i1=1  
i1=1 i2=4