

## Problem 7: Experts

### Introduction

Finally it has become possible to send a large number of scientists to the Mars. Thus NASA organizes the biggest space expedition ever: it will select a group of experts who will do important scientific research on Mars. There are lots of experts available, every one of them is expert in one or more fields. Your job is to select the crew optimally. First of all, it is very important that we send at least one expert in every field. Furthermore, we want to avoid disputes: if there are two or more persons knowledgeable in the same field, they might disagree and a bitter argument could jeopardize the whole mission. However, these scientists are very disciplined: if there are an *odd* number of experts in the same field, then they can always settle every question using a simple majority vote. If there is an *even* number of experts in the field, then the vote might be a draw, further complicating the situation. Therefore we want to select a crew such that every field is represented by an odd number of experts.

### Input

The input contains several blocks of test cases. Each case begins with a line containing two numbers  $n$  and  $m$ , the input is terminated by a block with  $n = m = 0$ . The number  $n$  ( $1 \leq n \leq 300$ ) is the number of experts available and  $m$  ( $1 \leq m \leq 300$ ) is the number of scientific fields. For simplicity, the fields are given as numbers  $1, 2, \dots, m$ . The first line is followed by  $n$  lines, corresponding to the  $n$  experts. The  $i$ th line begins with an integer  $t$  followed by  $t$  positive integers: these are the  $t$  fields in which the  $i$ th scientist is expert.

### Output

For each test case, you have to output a line containing 1 if there is a crew satisfying the requirements, otherwise output 0.

### Sample Input

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

### Sample Output

```
1
1
0

(In the first test case, selecting 1,2 or selecting 1,3
are both good solutions. In the second test case
the only good solution is selecting 1,2,3.)
```