Frequencies on a board — P66664_en

We have a board with m rows and n columns. In each board cell there is a digit `(0, ..., 9)`. Write a program that computes the frequency of each digit in each of the n columns of the board. The number of rows of a board can be very large.

Input

The input is a series of cases. Each case consists of two integers greater than zero m and n denoting, respectively, the number of rows and columns on the board, followed by a row-by-row description of the board's digits.

Output

For each case in the input, a frequency table. The table has ten rows, respectively representing the digits `0, .., 9` and n columns. The table value in row d column j should be the frequency of digit d in column j of the corresponding input board. A blank line appears after the frequency table.

Sample input 1

```
6 3
0 1 0
6 8 5
4 2 9
0 1 5
5 9 5
0 9 1

5 4
0 1 0 0
2 3 0 0
4 5 0 0
6 7 0 0
8 9 5 5

1 5
0 2 4 6 8

3 1
7
8
9
```

Sample output 1

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

1 0 4 4
0 1 0 0
1 0 0 0
0 1 0 0
1 0 0 0
0 1 1 1
1 0 0 0
0 1 0 0
1 0 0 0
0 1 0 0

1 0 0 0 0
0 0 0 0 0
0 1 0 0 0
0 0 0 0 0
0 0 1 0 0
0 0 0 0 0
0 0 0 1 0
0 0 0 0 0
0 0 0 0 1
0 0 0 0 0
```

```
0
0
0
0
0
0
```

```
0
1
1
1
```

Problem information

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