Problem Description

Rar the Cat is going on a fishing trip with **N-1** *other* cats which are labelled from **1** to **N** with Rar the Cat being **1**. The fishing trip will utilize *up to* **K** ships which Rar the Cat can split the cats between. Each cat can only be on one ship for the fishing trip and it can be assumed that the capacity of any of the ships is large enough to hold all the cats.

However, it is known that some cats dislike the presence of other cats. As such, Rar the Cat has formulated a dissatisfaction index which measures how much a pair of cats dislikes each other. The dissatisfaction index of 2 cats, *i* and *j* is given by *d(i, j)*, which would be provided by Rar the Cat. The range of numbers the dissatisfaction index can take is within the range [*0*, 10^9] and *d(i, j)* will be equal to *d(j, i*) for any pair of two cats and *d(i, i)* will be *0*. Also, Rar the Cat is not a very rich cat. Initially, he was intending to only rent a single ship but the dissatisfaction index was found to be too high. Now, he has doubled his savings by gambling at the Cat Casino and so the fishing trip can now utilize up to a pair of ships.

In order to minimize dissatisfaction, Rar the Cat would like to split the cats between **K** ships such that the overall dissatisfaction is minimized. Given that the set of cats in the x^{th} ship is denoted by S_x, the formula for the overall dissatisfaction of the trip is given as follows:

$$\boldsymbol{Overall\ Dissatisfaction} = \max_{0<x\leq \mathbf{K}} \left\{ \max_{i,j \in S_x} d(i,j) \right\}$$

Your task is, given **N** and the dissatisfaction index of every pair of cats, output the most optimal way to split the cats between **K** ships such that the overall dissatisfaction is minimized. If there are more than one way to split the cats between **K** ships such that the overall dissatisfaction is minimized, all valid ways will be accepted.

Input

The first line of input will consist of two *positive* integers, **N** and **K**.

There will be **N-1** lines that follows, the i^{th} of these lines will contain ***N*-*i*** integers with the j^{th} integer containing *d(i, i + j)*. For example, when **N** = 7, the 4^{th} line will contain *d(4, 5)* followed by *d(4, 6)*.

Output

You are to output **N** numbers to standard output.

For the i^{th} line, output a single integer denoting which ship the i^{th} cat is assigned to. This number should be between **1** and **K** as the ships are labelled as such.

Limits

- Time Limit: 2s
- Memory Limit: 32MB

In addition to what has been described in the task description, the input is guaranteed to fulfil the following conditions: (unless more specific constraints are made in the subtasks)

- $1 \le \mathbf{N} \le 10000$

Subtask 1 (1 point): $\mathbf{K} \le 1$

Subtask 2 (11 points): $1 \le \mathbf{N} \le 20$

Subtask 3 (30 points): $1 \le \mathbf{N} \le 250$

Subtask 4 (39 points): $1 \le \mathbf{N} \le 1000$

Subtask 5 (19 points): $1 \le \mathbf{N} \le 2500$

Sample Input 1

```
5 2
1 2 3 4
5 6 7
8 9
10
```

Sample Output 1

```
1
1
1
1
2
```

By having cats 1, 2, 3 and 4 in the first ship and cat 5 in the second ship, the overall dissatisfaction is 8.

Sample Input 2

```
3 1
1 1
1
```

Sample Output 2

```
1
1
1
```

There is no other way than to put all the cats on the only single ship.