

# Parallel Lines

Input file:            **standard input**  
Output file:         **standard output**  
Time limit:          3 seconds  
Memory limit:       512 megabytes

Once upon a time, there were  $k$  parallel lines in a two-dimensional plane and  $n$  points on these lines. It is known that there were **at least two** points on each line.

Now you are given these  $n$  points, and your task is to find those  $k$  parallel lines.

## Input

The first line contains two integers  $n, k$  ( $2 \leq n \leq 10^4, 1 \leq k \leq \min(50, \frac{n}{2})$ ), denoting the number of points and parallel lines.

The  $i$ -th of the next  $n$  lines contains two integers  $x_i, y_i$  ( $1 \leq x_i, y_i \leq 10^9$ ), denoting the coordinates of the  $i$ -th point.

It is guaranteed that  $n$  points are pairwise distinct (i.e.  $\forall 1 \leq i < j \leq n$ , either  $x_i \neq x_j$  or  $y_i \neq y_j$  holds).

## Output

The output contains  $k$  lines.

In the  $i$ -th line, first output an integer  $m_i$  ( $2 \leq m_i \leq n$ ), denoting the number of points on the  $i$ -th parallel line. Then output  $m_i$  integers  $x_1, x_2, \dots, x_{m_i}$ , denoting the indices of points on the  $i$ -th line.

Your output should satisfy that each point appears and only appears on one line, and  $k$  lines are parallel and different.

It is guaranteed there is a valid solution to distribute the  $n$  points onto  $k$  parallel lines. If multiple solutions exist, output any of them.

## Example

standard input	standard output
4 2	2 3 4
1 3	2 1 2
2 5	
4 7	
5 9	