Marble Game

Description

n marbles are placed on a cyclic gameboard, divided into mm cells. The cells are numbered 11 to mm. The board is cyclic, so cell 11 goes right after the cell mm in the direction of movement. ii-th marble can move ai cells during its turn .

The marbles are moved in turns; the game starts with a move by marble 1. In its turn, ii-th marble moves ai cells forward, knocking out all the marbles on its way. If there is a marble in the last cell of its path, that marble is also knocked out. After this, the value of ai is decreased by the number of marbles that were knocked out during this turn. If ai is zero or negative, the ii-th marble doesn't make moves anymore.

After marble 11 finishes its turn, marble 22 moves, then marble 33 and so on. After marble nn makes its move, marble 11 starts to move again, then marble 22 and so on the process goes forever. If a marble was already knocked out from the board, we consider it skips all its moves.

Identify which marbles remain standing at the end of the game.

When It can visit all of the squares, then place the number of jumps needed to reach that location from the starting point.

Input

- The first line of the input contains two integers nn and mm, number of marbles and game board size, respectively.
- The following nn lines contain marbles descriptions, two integers pipi and ai, the number of cells occupied by i-th marbles initially and initial skip length. All pipi are guaranteed to be distinct.

Output

- In the first line of the output number of marbles left finally on the gameboard.
- In the second line of the output, display their numbers in ascending order.

Constraints

- $1 \leq n \leq 100000$
- $1 \leq m \leq 10^9$
- $n \leq m$

Sample Input 0: 3 5 2 1 5 3 4 3
Sample Output 0: 1 3

EXPLANATION:

The first marble jumps 11 cells and finishes in cell number 33. Second marble jumps 33 cells and finishes on cell number 33, knocking out marble number 11. Current jump length for marble number 22 is now 22. Third marble jumps to cell 22, then second marble jumps to cell 55. Third marble in turn finishes in cell 55 and removes marble 22 from the gameboard. Now, it's the only remaining frog in the game.