J: Pareto Optimal

Time Limit: 4 seconds

Audrey is in charge of a club called the Mathematically Curious Summer Programmers. Each person is rated on two attributes, their mathematical skill and their curiosity.

Audrey needs to send a representative to the Magical Institution of Trigonometry and wants to put her club in the best possible light. Audrey, knowing that the ratings for mathematical skill and curiosity can be imprecise, picks an integer k.

A person with mathematical skill m_i and curiosity c_i is ineligible for consideration if and only if there exists some other person with mathematical skill m_j and curiosity c_j such that at least one of the two conditions is true:

- $m_j \geq m_i + k$ and $c_j \geq c_i$.
- $m_j \geq m_i$ and $c_j \geq c_i + k$.

List all people that are eligible for consideration.

Input

The first line of input contains a single integer T ($1 \leq T \leq 10^4$), representing the number of test cases.

The descriptions of T test cases follow. Each test case starts with a line containing two integers, n ($1 \leq n \leq 2 \cdot 10^5$) and k ($1 \leq k \leq 10^9$). Audrey's club has n people.

The next n lines each contain two integers, m and c ($1 \leq m, c \leq 10^9$), the mathematical skill and curiosity of each person. These people are numbered from 1 to n in the order given. No two people in the same test case have both the same mathematical skill and the same curiosity.

The sum of n over all test cases will not exceed $2 \cdot 10^5$.

Output

For each test case, output two lines. The first line should contain an integer p, the number of people who are eligible for consideration. The second line should contain p integers in increasing order, the numbers of the people eligible for consideration. It can be shown that there will always be at least one person eligible for consideration.

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