Problem A. Scrapy

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	1024 megabytes

Hadia is taking her cute puppy "Scrapy"for a trip outside the town. She will be taking him to Disneyland for his birthday anniversary. Of course, they will be taking a plane. Hadia is very concerned about Scrapy's situation during the trip over the plane. In fact, she will first pick multiple airlines and then select a subset of these that will make her feel safe about her puppy.

Selecting a subset of airlines that will make Hadia feel safe is not easy. The problem is that we need to select airlines based on their comfort level and security level, such that the chosen subset fulfills the following requirements:

If we arrange the subset of the airlines in a certain order to meet Hadia's needs on a certain Sunday, we will have $c_i \leq c_{i+1}$ and $s_i \leq s_{i+1}$ where c_i and s_i denote the comfort and security level of the i-th company respectively. Furthermore, we want this subset to be maximum as Hadia wants to choose as many airlines as she can before deciding which one to choose in the end.

Given a set of airlines (denoted by the name, comfort level, and security level), please help Hadia find the maximum subset that responds to her requirements.

Input

The input starts with a number $N \leq 2 \times 10^5$ which denotes and the number of airlines in the set.

N lines follow, where line i contains a string name, an integer comfort, and an integer security giving the information about the i-th airline in the initial set and separated by one space. ($|\text{name}| \leq 20$, $|\text{comfort}| \leq 10^5$, $|\text{security}| \leq 10^5$)

Output

On the first line, print an integer k, denoting the maximum size of the subset. The following k lines contain the names of the airlines in that subset in any order. If there are multiple solutions, print any one of them.

Example

standard input	standard output
4 RAM 10 8 DAH -2 7 AF 5 6 TAR 10 10	3 DAH RAM TAR

Note

P.S.: Comfort and security can be negative.

P.P.S: Names are unique and are in alphanumeric characters only