111101 Is Bigger Smarter?

Some people think that the bigger an elephant is, the smarter it is. To disprove this, you want to analyze a collection of elephants and place as large a subset of elephants as possible into a sequence whose weights are increasing but IQ's are decreasing.

Input

The input will consist of data for a bunch of elephants, at one elephant per line terminated by the end-of-file. The data for each particular elephant will consist of a pair of integers: the first representing its size in kilograms and the second representing its IQ in hundredths of IQ points. Both integers are between 1 and 10,000. The data contains information on at most 1,000 elephants. Two elephants may have the same weight, the same IQ, or even the same weight and IQ.

Output

The first output line should contain an integer n, the length of elephant sequence found. The remaining n lines should each contain a single positive integer representing an elephant. Denote the numbers on the ith data line as $W[i]$ and $S[i]$. If these sequence of n elephants are $a[1]$, $a[2]$,..., $a[n]$ then it must be the case that

$$W[a[1]] < W[a[2]] < ... < W[a[n]] \;\; \text{and} \;\; S[a[1]] > S[a[2]] > ... > S[a[n]]i$$

In order for the answer to be correct, n must be as large as possible. All inequalities are strict: weights must be strictly increasing, and IQs must be strictly decreasing.

Your program can report any correct answer for a given input.

Sample Input	Sample Output
6008 1300	4
6000 2100	4
500 2000	5
1000 4000	9
1100 3000	7
6000 2000	
8000 1400	
6000 1200	
2000 1900	