Is Bigger Smarter?

Source: http://acm.tju.edu.cn/toj/showp1216.html

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

The input consists of several test cases, terminated by the end-of-file. Each test case begins with a line with a single integer n, the number of elephants. Follow then n lines, one per elephant. The data for a particular elephant consists of a pair of integers: the first representing its weight in kilograms and the second representing its IQ in hundredths of IQ points. Both integers are between 1 and 10000. Each data set contains information for at most 1000 elephants. Two elephants may have the same weight, the same IQ, or even the same weight and IQ.

Say that the numbers for the i-th elephant (1<=i<= n) are `W[i]` and `S[i]`. Your program should output a sequence of lines of data, one per data set; each line should contain a number k followed by k integers, each one representing a the index of an elephant in the input sequence. If these k integers are `a[1]`, `a[2]`,..., `a[k]` then it must be the case that

```
W[a[1]] < W[a[2]] < ... < W[a[k]]
```

and

```
S[a[1]] > S[a[2]] > ... > S[a[k]]
```

In order for the answer to be correct, k should be as large as possible. All inequalities are strict: weights must be strictly increasing, and IQs must be strictly decreasing. There may be many correct outputs for a given input, your program only needs to find one.

Sample Input

```
9
6008 1300
6000 2100
500 2000
1000 4000
1100 3000
6000 2000
8000 1400
6000 1200
2000 1900

2
3007 1259
6204 2112
```

Sample Output

```
4 4 5 9 7
1 2
```