

Mr. and Mrs. Smith are going to the seaside for their holiday. Before they start off, they need to choose a hotel. They got a list of hotels from the Internet, and want to choose some candidate hotels which are cheap and close to the seashore. A candidate hotel  $M$  meets two requirements:

1. Any hotel which is closer to the seashore than  $M$  will be more expensive than  $M$ .
2. Any hotel which is cheaper than  $M$  will be farther away from the seashore than  $M$ .

## Input

There are several test cases. The first line of each test case is an integer  $N$  ( $1 \leq N \leq 10000$ ), which is the number of hotels. Each of the following  $N$  lines describes a hotel, containing two integers  $D$  and  $C$  ( $1 \leq D, C \leq 10000$ ).  $D$  means the distance from the hotel to the seashore, and  $C$  means the cost of staying in the hotel. You can assume that there are no two hotels with the same  $D$  and  $C$ . A test case with  $N = 0$  ends the input, and should not be processed.

## Output

For each test case, you should output one line containing an integer, which is the number of all the candidate hotels.

## Sample Input

```
5
300 100
100 300
400 200
200 400
100 500
0
```

## Sample Output

```
2
```