

Maximum Independent Subset

Time limit: 1.0s **Memory limit:** 1G

You are given a set S consisting of N disjoint segments of integers. That is, S can be represented as the union of N disjoint intervals of integers $[L_i, R_i]$. Let's call a set independent if it has the property that no element of the set is exactly 2 times another. Please find the size of the largest independent subset of S .

Input Specification

The first line will contain a single integer N .

The next N lines will each contain 2 integers L_i and R_i , representing that S contains all integers in the range $[L_i, R_i]$.

Output Specification

Output one integer, the size of the largest independent subset of S .

Constraints

$$1 \leq N \leq 10^5$$

$$1 \leq L_i \leq R_i \leq 10^{18}$$

For all pairs (i, j) such that $i \neq j$, either $L_i > R_j$ or $L_j > R_i$.

Subtask 1 [10%]

$$1 \leq L_i \leq R_i \leq 20$$

Subtask 2 [20%]

$$L_i = R_i$$

Subtask 3 [30%]

$$1 \leq N \leq 2000$$

$$1 \leq L_i \leq R_i \leq 10^{12}$$

Subtask 4 [40%]

No additional constraints.

Sample Input

```
3
5 7
9 11
1 3
```

Sample Output

```
6
```

Explanation

In this case, $S = \{1, 2, 3, 5, 6, 7, 9, 10, 11\}$.

One of the largest independent subsets of S is $\{2, 5, 6, 7, 9, 11\}$.