

Deadline Homework

time limit per test: 2 seconds (2 seconds for Python)
memory limit per test: 976.6 megabytes
input: standard input
output: standard output
points: 100 · problem code: deadlinehomework

You have n homework assignments to choose from. Each assignment takes exactly one hour to complete.

Assignment i has a deadline d_i and a score s_i . If you spend one full hour on it and finish by the end of hour d_i , you earn s_i points. Otherwise, you earn nothing for that assignment.

You can work on at most one assignment in each hour, and you do not have to complete every assignment.

What is the maximum total score you can earn?

Input

The first line contains an integer n , the number of assignments.

The next n lines each contain two integers d_i and s_i , the deadline and score of one assignment.

Output

Print one integer: the maximum total score you can earn.

Constraints

- $1 \leq n \leq 2 \cdot 10^5$
- $1 \leq d_i \leq 10^9$
- $1 \leq s_i \leq 10^9$

Example 1

Input

```
4
4 70
1 80
1 30
2 100
```

Output

```
250
```

Explanation

One optimal schedule is:

- hour 1: take the assignment with deadline 1 and score 80
- hour 2: take the assignment with deadline 2 and score 100
- hour 3: take the assignment with deadline 4 and score 70

This earns $80 + 100 + 70 = 250$ points.

Example 2

Input

```
5
1 10
1 20
1 30
1 40
1 50
```

Output

```
50
```

Example 3

Input

```
6
2 50
2 10
3 20
3 30
3 40
100 60
```

Output

```
180
```