Descrição do problem B : Problem B - Welcome to UCantinhos 2 **Concurso terminou**

Problem B - Welcome to UCantinhos 2!

Description

You are running *UCantinhos 2*, a leading event service from the University of Coimbra that organizes parties, weddings and corporate events in the cloister of the Palace of São Marcos in Vila Verde (there was a *UCantinhos* in former times). However, there are so many requests that is becoming hard to fit everything in the agenda and choices have to be made.

You decided to make the following greedy choice: get as much money as your can. (but do not forget that, more often than not, being greedy does not pay off) Of course, since there is only the cloister available for events, there should not be any pair of events overlapping in time.

Input

Each test case starts with the number of events (*n*). Each of the following *n* lines describes an event as follows: its *deadline*, that is, the amount of time, starting from today, to which the event must be finished; its *duration* and its *profit*.

You can assume that there is no event that takes more time that its deadline. Moreover, an event can start at the same time that other event finishes. There are at most 10000 events and the largest deadline is 100000 units of time.

Output

For each test case, print the maximum profit that can be obtained, without violating the deadline of any chosen event. Note that it may not be possible to consider all events.

Further considerations

Report

The maximum grade in mooshak is 150 points. In case you are able to reach 100 points, you are allowed to submit a 3-page report (in english or in portuguese) to describe your implementation. Use the template that is provided in inforestudante. The maximum grade in the report is 50 points. The grade depends of how well you are able to answer the following questions in the report:

- What is the time complexity of your approach? If your approach is recursive, which is the time complexity of each recursive step?
- Which data structures were implemented? What is their purpose?
- Is your approach correct for any input? Prove it, even if informally.
- (if applicable) Which speed-up tricks did you implement in order to reach 150 points?
- (if applicable) What could be the reason for not being able to reach 150 points?

Validation

In order to allow us to validate your solutions, implement a function that prints the index of each chosen event in a row, together with its starting time, ending time, deadline and profit. Give clear instructions on how to use this function. Note that if we are not able to validate your solution, your grade to this problem may be cancelled.

Example 1

Example input:

```
6
4 3 1
5 2 1
6 5 2
7 2 1
7 2 1
7 2 1
```

Example output:

```
3
```

Example 2

Example input:

```
6
9 1 4
7 3 2
7 4 5
4 1 3
4 1 1
4 3 4
```

Example output:

```
13
```

Example 3

Example input:

```
10
41 4 14
60 11 75
63 32 79
19 15 76
23 15 65
41 21 49
45 42 38
25 13 70
68 7 19
73 54 57
```

Example output:

```
257
```

Always improve the quality of your code