

Keep Colors Apart

Input file: *standard input*
Output file: *standard output*
Time limit: 3 seconds
Memory limit: 1024 mebibytes

There are n events. Event i has a deadline d_i , a color c_i , and a weight w_i . Every color occurs at most twice among the events.

You may choose any subset of the events and assign each chosen event to a positive integer day, so that all of the following hold:

- no two chosen events are assigned to the same day;
- if event i is assigned to day x , then $x \leq d_i$;
- if two consecutive days x and $x + 1$ both have an event assigned to them, those two events have different colors.

Days with no event assigned to them are allowed, and there is no limit on how large a day number may be. You may also choose no events at all, in which case the total weight is 0.

Find the maximum possible total weight of the chosen events.

Input

The first line contains a single integer t ($1 \leq t \leq 1000$): the number of test cases.

The first line of each test case contains a single integer n ($1 \leq n \leq 200\,000$): the number of events.

Each of the next n lines contains three integers d_i , c_i , and w_i ($1 \leq d_i, c_i, w_i \leq 10^9$): the deadline, the color, and the weight of the i -th event.

For every test case, each value occurs at most twice among $c_1, c_2, \dots, c_n$. It is guaranteed that the sum of n over all test cases does not exceed 200 000.

Output

For each test case, print a single integer: the maximum possible total weight.

Example

<i>standard input</i>	<i>standard output</i>
5	100
2	20
1 1 100	74
2 1 99	132
2	165
2 1 16	
3 1 4	
4	
2 1 37	
1 2 37	
2 2 12	
1 1 60	
7	
4 3 13	
2 3 3	
1 1 28	
6 2 30	
4 1 16	
5 2 21	
3 4 37	
10	
6 3 27	
5 4 8	
3 5 27	
2 2 11	
1 5 6	
1 1 33	
6 3 28	
1 4 32	
6 2 21	
2 1 30	

Note

In the first test case, the two events have the same color. Their deadlines do not leave an empty day between them, so at most one can be chosen; event 1 has the larger weight.

In the second test case, assign the first event to day 1 and the second event to day 3. The empty day 2 makes it possible to choose both events even though their colors are equal.

In the third test case, choose events 1 and 2 and assign them to days 2 and 1, respectively, for a total weight of 74.

In the fourth test case, one optimal schedule uses events 3, 4, 7, 5, and 6 on days 1 through 5, in that order. Its total weight is $28 + 30 + 37 + 16 + 21 = 132$. In particular, both occurrences of colors 1 and 2 are used, but equal colors are never placed on consecutive days.

In the fifth test case, one optimal schedule uses events 8, 10, 3, 1, 9, and 7 on days 1 through 6. Its total weight is 165.