



Worst Reporter 4

Bitaro is a professional reporter and writes reports on competitive programming contests. Several days later, an international competitive programming contest will be held. Bitaro is planning to write reports on it.

There will be N contestants, numbered from 1 to N . Each contestant has an integer called the **rating**, which measures their strength in competitive programming. A rating is an integer between 1 and 1 000 000 000, inclusive.

Bitaro conducted interviews with the contestants. He obtained the following information.

The rating of the contestant i ($1 \leq i \leq N$) is greater than or equal to the rating of the contestant A_i ($1 \leq A_i \leq N$). Here it might happen that $A_i = i$.

After the interviews, Bitaro received a list of the ratings of the contestants from a company managing the rating system. In the list, the following information was written.

The rating of the contestant i ($1 \leq i \leq N$) is equal to H_i .

Bitaro was trying to write a report based on the above information. However, it turned out that the list of the ratings of the contestants might contain errors.

Because the deadline is coming up soon, Bitaro has no time to obtain a correct list of the ratings. Therefore, Bitaro decided to change the ratings of some contestants in the list so that it will not contradict the information obtained by the interviews. The cost to change the rating of the contestant i ($1 \leq i \leq N$) in the list is C_i . That is, Bitaro can change the rating of the contestant i in the list into any integer between 1 and 1 000 000 000, inclusive, by paying a cost of C_i . In order to meet the deadline, Bitaro wants to minimize the total cost to change the ratings in the list.

Write a program which, given the number of contestants, information obtained by interviews, the list containing the ratings, and the cost to change the rating of each contestant in the list, calculates the minimum total cost to change the ratings in the list so that it will not contradict the information obtained by the interviews.



Input

Read the following data from the standard input. Given values are all integers.

N
 $A_1 H_1 C_1$
 \vdots
 $A_N H_N C_N$

Output

Write one line to the standard output. Output the minimum total cost.

Constraints

- $2 \leq N \leq 200\,000$.
- $1 \leq A_i \leq N$ ($1 \leq i \leq N$).
- $1 \leq H_i \leq 1\,000\,000\,000$ ($1 \leq i \leq N$).
- $1 \leq C_i \leq 1\,000\,000\,000$ ($1 \leq i \leq N$).

Subtasks

1. (14 points) $N \leq 5\,000$, $A_1 = 1$, $A_i \leq i - 1$ ($2 \leq i \leq N$).
2. (65 points) $A_1 = 1$, $A_i \leq i - 1$ ($2 \leq i \leq N$).
3. (21 points) No additional constraints.



Sample Input and Output

Sample Input 1	Sample Output 1
6 1 6 5 1 3 6 1 8 4 3 4 9 2 2 5 2 5 6	14

If Bitaro changes the ratings of the contestants in the list in the following way, it will not contradict the information obtained by the interviews.

- Change the rating of the contestant 1 from 6 to 1. The cost is 5.
- Change the rating of the contestant 3 from 8 to 4. The cost is 4.
- Change the rating of the contestant 5 from 2 to 1 000 000 000. The cost is 5.

Then the total cost is $5 + 4 + 5 = 14$. Since it is the minimum possible value, output 14.

This sample input satisfies the constraints of Subtasks 1, 2, 3.

Sample Input 2	Sample Output 2
5 1 1 1 2 2 1 4 3 1 3 3 1 4 3 1	0

In this sample input, the ratings of the contestants in the list do not contradict the information obtained by the interviews. Thus, the minimum total cost is 0. Hence, output 0.



The 20th Japanese Olympiad in Informatics (JOI 2020/2021)
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March 20–23, 2021 (Komaba, Tokyo)

Contest Day 4 – Worst Reporter 4

Sample Input 3	Sample Output 3
20 1 7 381792936 1 89 964898447 1 27 797240712 3 4 299745243 2 18 113181438 2 20 952129455 4 34 124298446 4 89 33466733 7 40 109601410 5 81 902931267 2 4 669879699 8 23 785166502 8 1 601717183 8 26 747624379 1 17 504589209 9 24 909134233 16 56 236448090 8 94 605526613 5 90 481898834 9 34 183442771	2711043927

This sample input satisfies the constraints of Subtasks 1, 2, 3.



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Contest Day 4 – Worst Reporter 4

Sample Input 4	Sample Output 4
20	4012295156
15 62 418848971	
13 5 277275513	
14 60 80376452	
12 14 256845164	
12 42 481331310	
6 86 290168639	
3 98 947342135	
3 19 896070909	
16 39 48034188	
8 29 925729089	
18 97 420006994	
13 51 454182928	
19 61 822405612	
13 37 148425187	
15 77 474094143	
14 27 272926693	
18 43 566552069	
9 93 790433300	
10 73 61654171	
14 28 334498030	