

Dynamic Programming: Good Sequence

There are N towers. The height of the i^{th} tower is H_i . A sequence of towers is **Good** if there are not any two adjacent towers that have the same heights. i.e for every i ($2 \leq i \leq N$) $H_{i-1} \neq H_i$ condition must hold.

You can increase the height of i^{th} tower but it will cost M_i , to increase the height by 1.

Find the minimum cost to make the sequence good.

Note

You can increase the height of a tower any number of times you want. You have to just minimize the cost to make the sequence of towers **Good**.

Function Description

In the provided code snippet, implement the `minCost(...)` method and print the minimum cost to make the sequence good. You can write code in the given space below the phrase **"WRITE YOUR LOGIC HERE"**.

There will be multiple test cases running so the Input and Output should match exactly as provided.

The base Output variable **result** is set to a default value of **-404** which can be modified. Additionally, you can add or remove these output variables.

Input Format

The first line of input consists of an integer N .

The next N lines of input contain the description of towers. The i^{th} line contains H_i and M_i - the height of i^{th} tower and the cost to increase the height of the tower by 1 respectively.

Sample Input

```
3                --denotes N.
2 4              --denotes two integers Hi and Mi
2 1              --denotes two integers Hi and Mi
3 5              --denotes two integers Hi and Mi
```

Constraints

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

$$1 \leq H_i, M_i \leq 10^9$$

Output Format

The output contains a single integer denoting the minimum cost to make a sequence Good.

Sample Output

```
2
```

Explanation

In the sample input, you have to increase the height of the second tower by 2.

$$\text{Cost} = M_2 + M_2 = 1 + 1 = 2.$$

Hence, the minimum cost to make the sequence Good is **2**.

```
function minCost(N,H,M) {  
    //this is default OUTPUT. You can change it.  
    var result =-404;  
    //write your Logic here:  
    return result;  
}  
  
// INPUT [uncomment & modify if required]  
var temp = gets().trim('\n').split(/\n|\s/)  
var N = parseInt(temp[0]);  
var H = [];  
for(var i = 1; i < 1+N; i++) {  
    H.push(parseInt(temp[i]));  
}  
  
var M = [];  
for(var i = 1+N; i < 1+N+N; i++) {  
    M.push(parseInt(temp[i]));  
}  
  
// OUTPUT [uncomment & modify if required]  
console.log(minCost(N,H,M));
```

Input

4

1 7

3 3

2 6

1000000000 2

Expected Output

0

Input

3

2 3

2 10

2 6

Expected Output

9

Input

3

2 4

2 1

3 5

Expected Output

2