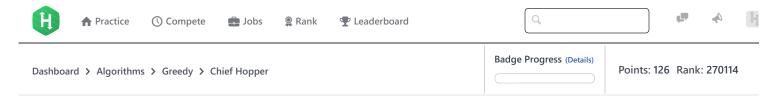
15/11/2017 HackerRank







Submissions Leaderboard Discussions Editorial	Problem	
---	---------	--

Chief's bot is playing an old DOS-based game. There are N+1 buildings in the game - indexed from 0 to N and are placed left-to-right. It is guaranteed that building with index 0 will be of height 0 unit. For buildings with index i ( $i \in [1, N]$ ) height will be  $h_i$  units.

At beginning Chief's bot is at building with index 0. At each step, bot jumps to next (right) building. Suppose bot is at  $k^{th}$  building and his current energy is botEnergy, then in next step he will jump to  $(k+1)^{th}$  building. He will gain/lose energy equal in amount to difference between  $h_{k+1}$  and botEnergy

- If  $h_{k+1} > botEnergy$ , then he will lose  $h_{k+1} botEnergy$  units of energy.
- Otherwise, he will gain  $botEnergy h_{k+1}$  units of energy.

Goal is to reach *N*<sup>th</sup> building, and during the course bot should never have negative energy units. What should be the minimum units of energy with which bot should start to successfully complete the game?

## **Input Format**

The first line contains integer N. Next line contains N space separated integers  $h_1, h_2, \cdots, h_N$  representing the heights of the buildings.

### **Output Format**

Print a single integer representing minimum units of energy required to complete the game.

#### **Constraints**

 $1 \le N \le 10^5 \ 1 \le h_i \le 10^5, i \in [1, N]$ 

## **Sample Input**

5 3 4 3 2 4

# sample Output

4

### **Sample Input**

3 4 4 4

# Sample Output

4

### **Explanation**

15/11/2017 HackerRank

☐ Test against custom input

**1** Upload Code as File

#### Sample 1

If initial energy is 4, after step 1 energy is 5, after step 2 it's 6, after step 3 it's 9 and after step 4 it's 16, finally at step 5 it's 28. You can verify for lower initial energy bot will have -ve energy in the end.

#### Sample 2

In the second test case if bot has energy 4, it's energy is changed by (4 - 4 = 0) at every step and remains 4.



Run Code

Submit Code



Join us on IRC at #hackerrank on freenode for hugs or bugs.

Contest Calendar | Blog | Scoring | Environment | FAQ | About Us | Support | Careers | Terms Of Service | Privacy Policy | Request a Feature