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## Dynamic maximum sum

P59380\_en

Dinovè Concurs de Programació de la UPC - Final (2021-09-22)

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In this problem, you have to efficiently keep a vector  $V$  with  $n$  integers. There is just one update operation: given any position  $i$  between 0 and  $n - 1$ , and an integer  $x$ , set  $V[i] = x$ . Apart from that, you have to repeatedly report the maximum sum of all the consecutive subsequences of the current vector.

### Input

Input consists of several cases. Every case begins with  $n$ , followed by the initial content of  $V$ , followed by  $n$  operations, each one with a pair  $i x$ . You can assume  $1 \leq n \leq 10^5$ ,  $0 \leq i < n$ , and  $-10^{12} \leq x \leq 10^{12}$ .

### Output

For every case, print  $n + 1$  numbers: the maximum sum of consecutive elements inside the vector before the first update, and also after every update. Print a line with 10 dashes at the end of each case.

#### Sample input

```
3
10 5 10
0 -3
1 -8
0 20

1
-300
0 0

3
1000000000000 1000000000000 1000000000000
1 -1
2 -1000000000000
2 2
```

#### Sample output

```
25
15
10
22
-----
0
0
-----
3000000000000
1999999999999
1000000000000
1000000000001
-----
```

### Problem information

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