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## Woche 03 – Competitive Programming

Abgabe 10.05.2016 09:00 Uhr, über das Judge-Interface

**Aufgabe 1** (crossrunning). (20 + 80 points - 2 seconds timelimit)

You are responsible for the next cross country running event of your local sports club. Currently, you are designing the track. Therefore you found a nice tour through the forrest with a lot of obstacles.

Now you are searching for a good place for the water obstacle. With your new digital altimeter you have already measured the height of the track in intervals of 1 meter. Obviously the water obstacle must be in a sink - so the height of the next and the last measuring point must be greater than the water obstacle.

Because of legal restrictions the height of the water obstacle is important. Please search for a good place and return the height of the measuring point.

**Notice:** The track is a circle and the start/finish point is not defined yet. So the the obstacle can be at the first measuring point, if the last measuring point and the second measuring point are greater.

**Input** The first line of the input contains the number  $n$  ( $1 \leq n \leq 800000$ ) of measuring points. Each of the  $n$  measuring points contains a number  $h_i$  ( $1 \leq h_i \leq 8000000$ ), the height of the  $i$ -th measuring point.

**Output** Please print only one line with the height of a good place for the water obstacle.

**Points** You will get 20 points for a solution of this task. If the complexity of your algorithm is in  $o(n)$ , you will get another 80 points. The jury will review the solutions after the end of the contest.

### Sample Input

6  
4

3  
1  
2  
6  
7

**Sample Output**

1