

Given an array of integers a , return a new array b using the following guidelines:

- For each index i in b , the value of b_i is the index of the a_j nearest to a_i and is also greater than a_i .
- If there are two options for b_i , put the leftmost one in b_i .
- If there are no options for b_i , put -1 in b_i .

Example

For $a = [1, 4, 2, 1, 7, 6]$, the output should be
 $\text{nearestGreater}(a) = [1, 4, 1, 2, -1, 4]$.

- for $a[0]$, the nearest larger element is 4 at index $a[1]$ $\rightarrow b[0]$ contains the value 1.
- for $a[1]$, the nearest larger element is 7 at $a[4]$ $\rightarrow b[1]$ contains the value 4.
- for $a[2]$, the nearest larger element is 4 at $a[1]$ (7 is also larger, but 4 has the minimal position) $\rightarrow b[2]$ contains the value 1.
- for $a[3]$, the nearest larger element is 2 at $a[2]$ (7 is also larger, but 2 has the minimal position) $\rightarrow b[3]$ contains the value 2.
- for $a[4]$, there is no element larger than 7 $\rightarrow b[4]$ contains the value -1 .
- for $a[5]$, the nearest larger element is 7 at $a[4]$ $\rightarrow b[5]$ contains the value 4.

Input/Output

- **[time limit] 4000ms (py3)**
- **[input] array.integer a**

An unsorted array of integers.

Guaranteed constraints:

$1 \leq a.length \leq 10^4$,
 $1 \leq a[i] \leq 10^9$.

- **[output] array.integer**

An array b , where for each index i , b_i is the index of the nearest number in a that is greater than a_i .