



CTU Open Contest 2026

Housing

`housing.(c|cpp|py), Housing.(java|kt)`

Míša with his above-average Ph.D. salary is planning to buy a house. The house is to be located on a development street where houses are numbered from 1 to n . To curate his perfect neighborhood, he plans to demolish a contiguous (possibly empty) block of houses from the far left of the street, and another (possibly empty) block from the far right.

This leaves a single, contiguous segment of remaining houses. Míša requires the price of the house to sit in the middle of the market — meaning its price must be the exact median of this newly formed neighborhood. More precisely, he can live in the i -th house ($i \in \{1, \dots, n\}$) if there exists a contiguous row of houses $\ell, \ell + 1, \dots, r - 1, r$ such that house i lies in this row (i.e., $\ell \leq i \leq r$), the length $r - \ell + 1$ of the row is odd and at least 3, and the price a_i of the i -th house is the median of the prices $a_\ell, a_{\ell+1}, \dots, a_{r-1}, a_r$.

Recall that an element x of an array $b = (b_1, b_2, \dots, b_{t-1}, b_t)$ of odd length t is the *median* if, after sorting the array b , the value x lies at position $\frac{t+1}{2}$.

It is guaranteed that every house on the street has a unique price.

Help Míša figure out which houses are viable options for living given his requirements.

Formally, determine which elements a_i of an array $a_1, a_2, \dots, a_n$ are the median of some subarray of odd length at least 3 containing a_i . All the elements of the array are distinct.

Input Specification

The first input line contains an integer n ($3 \leq n \leq 2 \cdot 10^5$), the number of houses in the street. The next input line contains n pairwise distinct integers $a_1, a_2, \dots, a_n$ ($1 \leq a_i \leq n$), i.e., a permutation of $1, \dots, n$, representing the prices of the houses on the street.

Output Specification

Output a single line with n space-separated strings. The i -th string is either YES if Míša can live in the i -th house (in the house with price a_i), otherwise, the string is NO.

Sample Input 1

```
5
2 5 1 4 3
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Output for Sample Input 1

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YES NO NO YES YES
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