

Check 1324

Given a permutation $P[1 \dots n]$ of $\{1, 2, \dots, n\}$, you should output if the permutation contains a pattern of the form 1324. That is, do there exist indices $1 \leq i_1 < i_2 < i_3 < i_4 \leq n$ such that $P[i_1] < P[i_3] < P[i_2] < P[i_4]$. For example, $P = 6\ 8\ 5\ 4\ 9\ 3\ 7\ 2\ 1\ 10$ contains one: the indices 1, 2, 7, 10 correspond to the sequence 6 8 7 10 which is a 1324 pattern.

Input

First line contains T , the number of test cases

Each of the next T lines contains n ($1 \leq n \leq 100000$), followed by n integers, representing a permutation of $[1, 2, \dots, n]$.

$\text{SUM}(n * \log_2(n))$ over all test cases $\leq 10^8$. Do not assume anything else about the number of test cases or their distribution.

Output

Output T lines, one per test case: "yes" (without quotes) if the permutation contains a 1324 pattern or "no" (without quotes) otherwise.

Warning: Huge I/O

Example

Input:

```
2
10 6 8 5 4 9 3 7 2 1 10
10 5 3 4 7 9 10 8 6 2 1
```

Output:

```
yes
no
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