Ouroboros sequence   P87670_en
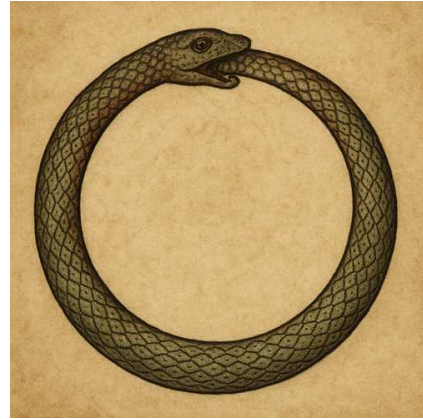
Vint-i-tresè Concurs de Programació de la UPC - Semifinal (2025-06-20)

The ouroboros is an ancient symbol depicting a snake eating its own tail.

We will call a sequence of n numbers $x_1 \ldots x_n$ an ouroboros if two things happen:

1. For every $1 \leq i < n$, x_i and x_{i+1} differ by one.

2. x_n and x_1 also differ by one.

For instance, 3 4 5 4 3 2 1 2 is an ouroboros sequence, while 3 4 5 4 3 is not.

Given a sequence of numbers, can you decide if they can be rearranged to form an ouroboros sequence?

Input

Input consists of several cases, each with n, followed by $x_1 \ldots x_n$. Assume $2 \leq n \leq 10^5$, and that each x_i is an integer number between 0 and 1000.

Output

Print one line for each case. If it is not possible to build an ouroboros sequence from the given numbers, print "NO". Otherwise, print "YES" followed by the lexicographically largest ouroboros sequence.

Sample input

```
8   3 4 5 4 3 2 1 2
5   3 4 5 4 3
2   1000 0
4   2 1 1 0
6   9 9 8 9 8 8
6   9 11 9 10 8 10
8   2 2 3 3 4 4 2 3
8   2 1 2 1 2 1 2 4
```

Sample output

```
YES 5 4 3 2 1 2 3 4
NO
NO
YES 2 1 0 1
YES 9 8 9 8 9 8
YES 11 10 9 8 9 10
NO
NO
```

Problem information

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