Almost Sorted

HackerRank

Problem Statement

Given an array with **n** elements, can you sort this array in **ascending order** using **just one** of the following operations? You can perform only one of the following operations:
1. Swap two elements.
2. Reverse one sub-segment

Input Format
The first line contains a single integer **n**, which indicates the size of the array. The next line contains **n integers seperated by spaces**.

```
n
d1 d2 ... dn
```

Constraints

2 <= n <= 100000
0 <= d_i <= 1000000

All d_i are distinct.

Output Format

1. If the array is already sorted, output 'yes' in the first line. You do not need to output anything else.
2. If you can sort this array using one single operation (from the two permitted operations):

   a. If you can sort the array by **swap d_l and d_r**, output "swap l r" in the second line. **l** and **r** are the indices of the elements to be swapped, assuming that the array is indexed from **1 to n**.

   b. Else if it is possible to sort the array by reversing the segment **d[l...r]**, output "reverse l r" in the second line. **l** and **r** are the indices of the first and last elements of the subsequence to be reversed, assuming that the array is indexed from **1 to n**.

   d[l...r] represents the sub-sequence of the array, beginning at index **l** and ending at index **r**; inclusive of both.

   If an array can be sorted by either swapping or reversing, stick to the **swap** based method.
3. If you cannot sort the array in either of the above ways, output "no" in the first line.

Sample Input #1

```
2
4 2
```

Sample Output #1

```
yes
swap 1 2
```

Sample Input #2

```
3
3 1 2
```

Sample Output #2

```
no
```

Sample Input #3

```
6
1 5 4 3 2 6
```

Sample Output #3

```
yes
reverse 2 5
```

Explanation

For #1: You can both swap(1, 2) and reverse(1, 2), but if you can sort the array but swap, output swap only.
For #2: It is impossible to sort by one single operation (among those permitted).
For #3, You can reverse the sub-array d[2...5] = "5 4 3 2" then the array become sorted.