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(/users/hariprakash\_s)

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# **Equal MEX**

Problem Code: EQUALMEX

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The **MEX** (minimum excluded) of an array is the **smallest non-negative integer** that does not belong to the array. For instance:

- The MEX of [2, 2, 1] is 0 because 0 does not belong to the array.
- The MEX of [3,1,0,1] is 2 because 0 and 1 belong to the array, but 2 does not.
- The MEX of [0,3,1,2] is 4 because 0,1,2 and 3 belong to the array, but 4 does not.

You're given an array A containing  $2\cdot N$  integers where  $0\leq A_i\leq N$ . Is it possible to reorder the elements of the array in such a way that the MEX of the first N elements is equal to the MEX of the last N elements?

### **Input Format**

- $\bullet\,$  The first line contains T denoting the number of test cases. Then the test cases follow.
- ullet The first line of each test case contains a single integer N .
- ullet The second line contains  $2\cdot N$  space-separated integers  $A_1,A_2,\ldots,A_{2\cdot N}.$

# **Output Format**

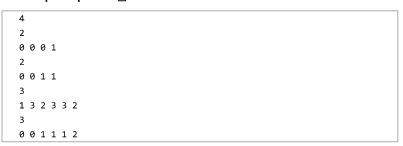
For each test case, print YES if there is a valid reordering of the given array and NO otherwise.

You may print each character of the string in uppercase or lowercase (for example, the strings "yEs", "yes", "Yes" and "YES" will all be treated as identical).

#### Constraints

- $1 \le T \le 10^4$
- $1 \le N \le 10^5$
- $0 \le A_i \le N$
- Sum of N over all test cases does not exceed  $2\cdot 10^5$  .

## Sample Input 1 4



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## EQUALMEX | EQUAL MEX ...



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## **Explanation**

**Test case** 1: There is no way to reorder the elements of the array [0, 0, 0, 1] which satisfies the given conditions.

**Test case** 2: One possible reordering is [0,1,0,1]. Here the MEX of the first half is MEX([0,1])=2 and the MEX of the second half is MEX([0,1])=2.

**Test case** 3: The given array already satisfies the conditions. Here the MEX of the first half is MEX([1,3,2])=0 and the MEX of the second half is MEX ([3,3,2])=0.

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Problem level: Unavailable

Date Added: 2-02-2022

Time Limit: 1 secs

Source Limit: 50000 Bytes

Languages: CPP17, PYTH 3.6, JAVA, C, CPP14, PYTH, PYP3,

CS2, ADA, PYPY, TEXT, PAS fpc, NODEJS, RUBY, PHP, GO, HASK, TCL, kotlin, PERL, SCALA, LUA, BASH, JS, rust, LISP sbcl, PAS gpc, BF, CLOJ, R, D, CAML, swift, FORT, ASM, FS, WSPC, LISP clisp, SQL, SCM guile, PERL6, ERL, CLPS, PRLG, SQLQ, ICK, NICE, ICON, COB, SCM chicken, PIKE, SCM gobi, ST,

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