

## Problem B. Beautiful Permutation

Input file: *standard input*  
Output file: *standard output*  
Time limit: 1 second  
Memory limit: 512 mebibytes

A permutation  $a_0, a_1, \dots, a_{n-1}$  of  $0, 1, \dots, n-1$  is said to be *beautiful* if the sequence  $b_0, \dots, b_{n-1}$  defined as  $b_i = |a_i - i|$  is also a permutation of  $0, \dots, n-1$ .

Given  $n$ , construct a beautiful permutation of  $n$  elements or determine that it does not exist.

### Input

The first line contains a single integer  $n$  ( $1 \leq n \leq 10^6$ ): the size of the permutation.

### Output

If there is no beautiful permutation of  $n$  elements, output a single line with the word “NO”.

Otherwise, on the first line, print “YES”, and on the second line, print  $n$  space-separated integers  $a_0, \dots, a_{n-1}$ : the beautiful permutation. If there are multiple beautiful permutations, print any one of them.

### Examples

standard input	standard output
4	YES 3 0 2 1
3	NO
1	YES 0