

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