

C. Prefix Product Sequence

time limit per test: 1 second

memory limit per test: 256 megabytes

input: standard input

output: standard output

Consider a sequence $[a_1, a_2, \dots, a_n]$. Define its prefix product sequence .

Now given n , find a permutation of $[1, 2, \dots, n]$, such that its prefix product sequence is a permutation of $[0, 1, \dots, n - 1]$.

Input

The only input line contains an integer n ($1 \leq n \leq 10^5$).

Output

In the first output line, print "YES" if such sequence exists, or print "NO" if no such sequence exists.

If any solution exists, you should output n more lines. i -th line contains only an integer a_i . The elements of the sequence should be different positive integers no larger than n .

If there are multiple solutions, you are allowed to print any of them.

Examples

input
7
output
YES 1 4 3 6 5 2 7

input
6
output
NO

Note

For the second sample, there are no valid sequences.