

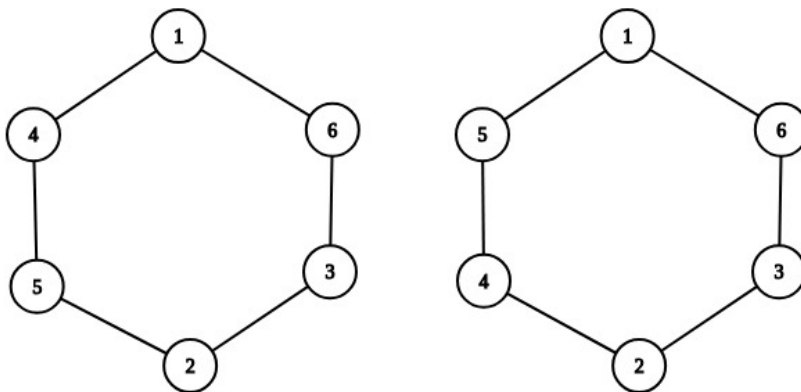
A. Almost Equal

time limit per test: 1 second
memory limit per test: 256 megabytes
input: standard input
output: standard output

You are given integer n . You have to arrange numbers from 1 to $2n$, using each of them exactly once, on the circle, so that the following condition would be satisfied:

For every n consecutive numbers on the circle write their sum on the blackboard. Then any two of written on the blackboard $2n$ numbers differ not more than by 1.

For example, choose $n = 3$. On the left you can see an example of a valid arrangement: $1 + 4 + 5 = 10$, $4 + 5 + 2 = 11$, $5 + 2 + 3 = 10$, $2 + 3 + 6 = 11$, $3 + 6 + 1 = 10$, $6 + 1 + 4 = 11$, any two numbers differ by at most 1. On the right you can see an invalid arrangement: for example, $5 + 1 + 6 = 12$, and $3 + 2 + 4 = 9$, 9 and 12 differ more than by 1.



Input

The first and the only line contain one integer n ($1 \leq n \leq 10^5$).

Output

If there is no solution, output "NO" in the first line.

If there is a solution, output "YES" in the first line. In the second line output $2n$ numbers — numbers from 1 to $2n$ in the order they will stay in the circle. Each number should appear only once. If there are several solutions, you can output any of them.

Examples

| | |
|-------------|------|
| input | Copy |
| 3 | |
| output | Copy |
| YES | |
| 1 4 5 2 3 6 | |
| input | Copy |
| 4 | |
| output | Copy |
| NO | |

Note

Example from the statement is shown for the first example.

It can be proved that there is no solution in the second example.

Codeforces Round #580 (Div. 1)

Finished

Practice



→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Problem tags

constructive algorithms greedy math *1300

No tag edit access

→ Contest materials

- [Announcement #1 \(en\)](#) ☐
- [Announcement #2 \(ru\)](#) ☐
- [Tutorial \(en\)](#) ☐

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