PROBLEMS    SUBMIT    STATUS    STANDINGS    CUSTOM TEST

# A. Exam

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

An exam for $n$ students will take place in a long and narrow room, so the students will sit in a line in some order. The teacher suspects that students with adjacent numbers ($i$ and $i + 1$) always studied side by side and became friends and if they take an exam sitting next to each other, they will help each other for sure.

Your task is to choose the maximum number of students and make such an arrangement of students in the room that no two students with adjacent numbers sit side by side.

### Input

A single line contains integer $n$ ($1 \le n \le 5000$) — the number of students at an exam.

### Output

In the first line print integer $k$ — the maximum number of students who can be seated so that no two students with adjacent numbers sit next to each other.

In the second line print $k$ distinct integers $a_1$, $a_2$, ..., $a_k$ ($1 \le a_i \le n$), where $a_i$ is the number of the student on the $i$-th position. The students on adjacent positions mustn't have adjacent numbers. Formally, the following should be true: $|a_i - a_{i+1}| \ne 1$ for all $i$ from $1$ to $k$ - $1$.

**If there are several possible answers, output any of them.**

### Examples

| input |
| --- |
| 6 |
| output |
| 6<br>1 5 3 6 2 4 |

| input |
| --- |
| 3 |
| output |
| 2<br>1 3 |

→ **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

→ **Problem tags**

constructive algorithms

implementation

No tag edit access

→ **Contest materials**

- Announcement    ✕
- Tutorial    ✕