Alice and Bob take turns playing a game, with Alice starting first.

Initially, there is a number N on the chalkboard.  On each player's turn, that player makes a *move* consisting of:

* Choosing any x with 0 < x < N and N % x == 0.
* Replacing the number N on the chalkboard with N - x.

Also, if a player cannot make a move, they lose the game.

Return True if and only if Alice wins the game, assuming both players play optimally.

**Example 1:**

**Input:** 2

**Output:** true

**Explanation:** Alice chooses 1, and Bob has no more moves.

**Example 2:**

**Input:** 3

**Output:** false

**Explanation:** Alice chooses 1, Bob chooses 1, and Alice has no more moves.

**Note:**

1. 1 <= N <= 1000