

Subtraction Plus Plus Plus

Problem ID: subtractionplusplus



Alex and Steve just got back home from a mining trip and now have a lot of extra cobblestone. With their house already built, they decide to play a game of subtraction. They take turns subtracting from an initial stack of N cobblestone. At a turn i , the player can subtract any amount of cobblestone from 1 to i . For example, the first player who goes must subtract exactly 1 cobblestone and the second player can either subtract 1 or 2 cobblestone. The player who cannot subtract anything loses. Alex always goes first. Will Alex win if she plays optimally?

Input

The first line consists of 1 integer, $1 \leq N \leq 200\,000$, the initial cobblestone stack size.

Output

Output “YES” if Alex will win, “NO” if otherwise.

Sample Input 1	Sample Output 1
1	YES
Sample Input 2	Sample Output 2
4	YES