

Stone Games w Friend

There will be G games

In each game there will be N heaps. In each heap there will be $A[i]$ stones. In each turn you can take a maximum of $\text{floor}(\sqrt{A[i]})$ and a minimum of 1 stone. When all the heaps reach 0 stones, whoever's turn it is loses, as they cannot take any more stones. Assume both players play optimally, and player 0 goes first and player 1 goes second. Determine who wins each of these games.

Input:

The input starts with integer G.

Each following line will represent one game. The input starts with the integer N, and then N integers where the i th integer denotes $A[i]$.

Output / Flag:

An integer where each bit represents the player that wins each game (ex 3: 011 meaning player 1 wins the first and second game). Wrap flag{} around the integer to get the flag.

Constraints:

$G = 30$

$1 < \text{All } N < 100$

$1 < \text{All } A[i] < 1e9$