

## E. Not a Nim Problem

time limit per test: 2 seconds  
memory limit per test: 512 megabytes

Two players, Alice and Bob, are playing a game. They have  $n$  piles of stones, with the  $i$ -th pile initially containing  $a_i$  stones.

On their turn, a player can choose any pile of stones and take any positive number of stones from it, with one condition:

- let the current number of stones in the pile be  $x$ . It is not allowed to take from the pile a number of stones  $y$  such that the greatest common divisor of  $x$  and  $y$  is not equal to 1.

The player who cannot make a move loses. Both players play optimally (that is, if a player has a strategy that allows them to win, no matter how the opponent responds, they will win). Alice goes first.

Determine who will win.

### Input

The first line contains a single integer  $t$  ( $1 \leq t \leq 10^4$ ) — the number of test cases.

Each test case consists of two lines:

- the first line contains a single integer  $n$  ( $1 \leq n \leq 3 \cdot 10^5$ );
- the second line contains  $n$  integers  $a_1, a_2, \dots, a_n$  ( $1 \leq a_i \leq 10^7$ ).

Additional constraint on the input: the sum of  $n$  across all test cases does not exceed  $3 \cdot 10^5$ .

### Output

For each test case, output `Alice` if Alice wins, or `Bob` if Bob wins.

### Example

input	Copy
3 3 3 2 9 4 3 3 6 1 5 1 2 3 4 5	
output	Copy
Bob Alice Bob	

Educational Codeforces Round 169 (Rated for Div. 2)

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 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

Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

Submit?

Language: GNU G++20 13.2 (64 bit, win)

Choose file: Choose File No file chosen

Submit

Last submissions

Submission	Time	Verdict
<a href="#">276751657</a>	Aug/16/2024 11:49	Accepted
<a href="#">276745981</a>	Aug/16/2024 11:06	Wrong answer on test 2
<a href="#">276743174</a>	Aug/16/2024 10:40	Wrong answer on test 2
<a href="#">276721015</a>	Aug/16/2024 03:06	Wrong answer on test 2

Problem tags

brute force games math number theory \*2100

No tag edit access

Contest materials

Announcement

Tutorial #1

Tutorial #2 (en)