

C. Industrial Nim

time limit per test: 2 seconds

memory limit per test: 64 megabytes

input: standard input

output: standard output

There are n stone quarries in Petrograd.

Each quarry owns m_i dumpers ($1 \leq i \leq n$). It is known that the first dumper of the i -th quarry has x_i stones in it, the second dumper has $x_i + 1$ stones in it, the third has $x_i + 2$, and the m_i -th dumper (the last for the i -th quarry) has $x_i + m_i - 1$ stones in it.

Two oligarchs play a well-known game Nim. Players take turns removing stones from dumpers. On each turn, a player can select any dumper and remove any non-zero amount of stones from it. The player who cannot take a stone loses.

Your task is to find out which oligarch will win, provided that both of them play optimally. The oligarchs asked you not to reveal their names. So, let's call the one who takes the first stone «tolik» and the other one «bolik».

Input

The first line of the input contains one integer number n ($1 \leq n \leq 10^5$) — the amount of quarries. Then there follow n lines, each of them contains two space-separated integers x_i and m_i ($1 \leq x_i, m_i \leq 10^{16}$) — the amount of stones in the first dumper of the i -th quarry and the number of dumpers at the i -th quarry.

Output

Output «tolik» if the oligarch who takes a stone first wins, and «bolik» otherwise.

Examples

input
2 2 1 3 2
output
tolik

input
4 1 1 1 1 1 1 1 1
output
bolik