New Year Game

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It's New Year's Day, and Balsa and Koca are stuck inside watching the rain. They decide to invent a game, the rules for which are described below.

Given array a containing n integers, they take turns making a single move. *Balsa always moves first, and both players are moving optimally (playing to win and making no mistakes).*

During each move, the current player chooses one element from a, adds it to their own score, and deletes the element from a; because the size of a decreases by 1 after each move, a's size will be 0 after n moves and the game ends (as all elements were deleted from a). We refer to Balsa's score as S_b and Koca's score as S_k. Koca wins the game if $|S_b - S_k|$ is divisible by 3; otherwise Balsa wins.

Given a, determine the winner.

Note: $S_b + S_k = a_0 + a_1 + \ldots + a_{n-2} + a_{n-1}$.

Input Format

The first line contains an integer, T, denoting the number of test cases.
Each test case is comprised of two lines; the first line has an integer n, and the second line has n space-separated integers $a_0, a_1, \ldots, a_{n-2}, a_{n-1}$ describing array a.

Constraints

$1 \leq T \leq 100$
$1 \leq a_i \leq 2000$
$1 \leq n \leq 2000$

Subtasks

For 50% score: $1 \leq n \leq 200$
For 100% score: $1 \leq n \leq 2000$

Output Format

For each test case, print the winner's name on a single line; if Balsa wins print **Balsa**, otherwise print **Koca**.

Sample Input

```
2
3
7 6 18
1
3
```

Sample Output

```
Balsa
Koca
```

Explanation

Test Case 1

Array $a = \{7, 6, 18\}$. The possible play scenarios are:

1. $S_b = 13$, $S_k = 18$, $|S_b - S_k| = 5$, and $5\%3 \neq 0$.
2. $S_b = 24$, $S_k = 7$, $|S_b - S_k| = 17$, and $17\%3 \neq 0$.
3. $S_b = 25$, $S_k = 6$, $|S_b - S_k| = 19$, and $19\%3 \neq 0$.

In this case, it doesn't matter what Balsa chooses because the difference between their scores isn't divisible by 3. Thus, Balsa wins.

Test Case 2

Array $a = \{3\}$. Balsa must choose that element, the first move ends the game.

$S_b = 3$, $S_k = 0$, $|S_b - S_k| = 3$, and $3\%3 = 0$. Thus, Koca wins.

Submissions:491

Max Score:60
Difficulty: Medium

Rate This Challenge:

More

Current Buffer (saved locally, editable) Java 7

```
import java.io.*;
import java.util.*;
import java.text.*;
import java.math.*;
import java.util.regex.*;

public class Solution {

    public static void main(String[] args) {
        Scanner in = new Scanner(System.in);
        int T = in.nextInt();
        for(int a0 = 0; a0 < T; a0++){
            int n = in.nextInt();
            int a[] = new int[n];
            for(int a_i=0; a_i < n; a_i++){
                a[a_i] = in.nextInt();
            }
            // your code goes here
        }
    }
}

```

Line: 1 Col: 1

Upload Code as File Test against custom input Run Code Submit Code