





# Poker Nim 🏠

209/563 challenges solved

Rank: **1019** | Points: **5475.31** ①



Problem

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# RATE THIS CHALLENGE



Poker Nim is another f 2-player game that's a simple variation on a Nim game. The rules of the games are as follows:

- The game starts with n piles of chips indexed from 0 to n-1. Each pile i (where  $0 \le i < n$ ) has  $c_i$  chips.
- The players move in alternating turns. During each move, the current player must perform either of the following actions:
  - Remove one or more chips from a single pile.
  - Add one or more chips to a single pile.

At least **1** chip must be added or removed during each turn.

- To ensure that the game ends in finite time, a player cannot add chips to any pile  $m{i}$  more than  $m{k}$  times.
- The player who removes the last chip wins the game.

Given the values of n, k, and the numbers of chips in each of the n piles, determine whether the person who wins the game is the first or second person to move. Assume both players move optimally.

# **Input Format**

The first line contains an integer,  $oldsymbol{T}$  , denoting the number of test cases.

Each of the  $m{2T}$  subsequent lines defines a test case. Each test case is described over the following two lines:

- 1. Two space-separated integers,  $\boldsymbol{n}$  (the number of piles) and  $\boldsymbol{k}$  (the maximum number of times an individual player can add chips to some pile  $\boldsymbol{i}$ ), respectively.
- 2. n space-separated integers,  $c_0, c_1, \ldots, c_{n-1}$ , where each  $c_i$  describes the number of chips at pile i.

#### Constraints

- 1 < T < 100
- $1 \le n, k \le 100$
- $1 \le c_i \le 10^9$

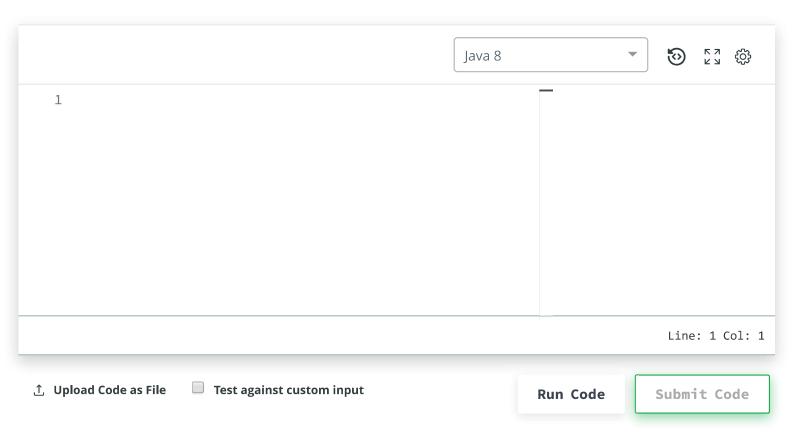
# **Output Format**

For each test case, print the name of the winner on a new line (i.e., either **First** or **Second**).

# Sample Input







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