16/11/2017 HackerRank



# Introduction to Nim Game





Nim is the most famous two-player algorithm game! The basic rules for this game are as follows:

- The game starts with n piles of stones indexed from 0 to n-1. Each pile i (where  $0 \le i < n$ ) has  $s_i$  stones.
- The players move in alternating turns, with First always playing first and Second always playing second. During each move, the current player
  must remove one or more stones from a single pile.
- The first player who is unable to remove a stone (e.g., a stone can't be removed if all piles are already empty) loses the game.

Given the value of *n* and the number of stones in each pile, determine the game's winner if both players play optimally.

#### **Input Format**

The first line contains an integer,  $g_i$  denoting the number of games they play. Each of the 2g subsequent lines defines a game. Each game is described over the following two lines:

- 1. An integer, n, denoting the number of piles.
- 2. n space-separated integers,  $s_0, s_1, \ldots, s_{n-1}$ , where each  $s_i$  describes the number of stones at pile i.

# **Constraints**

- $1 \le g \le 100$
- $1 \le n \le 100$
- $0 \le s_i \le 100$

#### **Output Format**

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

## Sample Input

2 1 4

### **Sample Output**

Second First 16/11/2017 HackerRank

Max Score:15
Difficulty: Easy

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Current Buffer (saved locally, editable) & 🔈
                                                                                            Java 7
                                                                                                                              \Diamond
 1 ▼ import java.io.*;
 2 import java.util.*;
 3
    import java.text.*;
    import java.math.*;
    import java.util.regex.*;
 7 ▼ public class Solution {
 8
 9 ▼
        public static void main(String[] args) {
             /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
10 ▼
11
         }
12
   }
                                                                                                                      Line: 1 Col: 1
                       Test against custom input
                                                                                                         Run Code
                                                                                                                       Submit Code
1 Upload Code as File
```

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