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Nimble Game

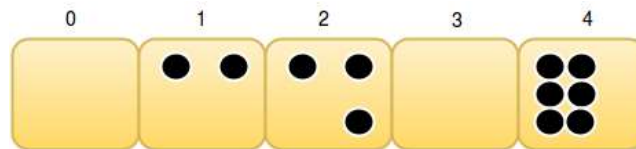| Problem	Submissions	Leaderboard

Two people are playing Nimble! The rules of the game are:

Solved: 51
Attempted: 53

- The game is played on a line of n squares, indexed from 0 to $n - 1$. Each square i (where $0 \leq i < n$) contains c_i coins. For example:

- The players move in alternating turns. During each move, the current player must remove exactly 1 coin from square i and move it to square j if and only if $0 \leq j < i$.

- The game ends when all coins are in square 0 and nobody can make a move. The first player to have no available move loses the game.

Given the value of n and the number of coins in each square, 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, T, denoting the number of test cases.
Each of the $2T$ subsequent lines defines a test case. Each test case is described over the following two lines:

1. An integer, n, denoting the number of squares.

2. n space-separated integers, $c_0, c_1, \ldots, c_{n-1}$, where each c_i describes the number of coins at square i.

Constraints

- $1 \leq T \leq 10^4$

- $1 \leq n \leq 100$

- $0 \leq c_i \leq 10^9$

Output Format

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

Sample Input

```
2
5
0 2 3 0 6
4
0 0 0 0
```

Sample Output

```
First
Second
```

Explanation

Explanation for 1st testcase:

The first player will shift one coin from $square_2$ to $square_0$. Hence, the second player is left with the squares $[1, 2, 2, 0, 6]$. Now whatever be his/her move is, the first player can always nullify the change by shifting a coin to the same square where he/she shifted it. Hence the last move is always played by the first player, so he wins.

Exlanation for 2nd testcase:

There are no coins in any of the squares so the first player cannot make any move, hence second player wins.

Contest ends in a day

Submissions: 49
Max Score: 50

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More

Python 3

```python
#!/bin/python3

import math
import os
import random
import re
import sys

#
# Complete the 'nimbleGame' function below.
#
# The function is expected to return a STRING.
# The function accepts INTEGER_ARRAY s as parameter.
#

def nimbleGame(s):
    temp = 0
    for i in range(1,len(s)):
        if s[i]%2: temp^=i
    return "First" if temp else "Second"

if __name__ == '__main__':
    fptr = open(os.environ['OUTPUT_PATH'], 'w')

    t = int(input().strip())

    for t_itr in range(t):
        n = int(input().strip())

        s = list(map(int, input().rstrip().split()))

        result = nimbleGame(s)

        fptr.write(result + '\n')

    fptr.close()
```

Line: 1 Col: 1

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