16/11/2017 HackerRank



Fun Game



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Kyle and Mike are bored on a rainy day and decide to pass the time by creating a new game having the following rules:

- The game starts with two n-integer arrays, A and B, and is played by two players, P_1 and P_2 .
- The players move in alternating turns, with P_1 always moving first. During each move, the current player must choose an integer, i, such that $0 \le i \le n-1$. If the current player is P_1 , then P_1 receives A_i points; if the current player is P_2 , then P_2 receives B_i points.
- Each value of i can be chosen only once, meaning that the game always ends after n moves.
- The player with the maximum number of points wins.

Given the values of n, A, and B, can you determine the outcome of the game? Print **First** if P_1 will win, **Second** if P_2 will win, or **Tie** if they will tie. Assume both players always move optimally.

Input Format

The first line of input contains a single integer, T, denoting the number of test cases. Each of the 3T subsequent lines describes a test case. A single test case is defined over the following three lines:

- 1. An integer, n, denoting the number of elements in arrays A and B.
- 2. n space-separated integers, $A_0, A_1, \ldots, A_{n-1}$, where each A_i describes the element at index i of array A.
- 3. n space-separated integers, $B_0, B_1, \ldots, B_{n-1}$, where each B_i describes the element at index i of array B.

Constraints

- $1 \le T \le 10$
- $1 \le n \le 1000$
- $1 \le A_i, B_i \le 10^5$

Output Format

For each test case, print one of the following predicted outcomes of the game on a new line:

- Print **First** if P_1 will win.
- Print **Second** if P_2 will win.
- Print **Tie** if the two players will tie.

Sample Input

- 1 1

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Sample Output

First Tie Second

Explanation

Test Case 0: $A = \{1, 3, 4\}$, $B = \{5, 3, 1\}$ The players make the following n moves:

- 1. P_1 chooses i = 2 and receives 4 points.
- 2. P_2 chooses i=0 and receives 5 points. Note that P_2 will not choose i=1, because this would cause P_1 to win.
- 3. P_1 chooses i = 1 (which is the only remaining move) and receives 3 points.

As all n=3 moves have been made, the game ends. P_1 's score is 7 points and P_2 's score is 5 points, so P_1 is the winner and we print **First** on a new line.

Test Case 1: $A = \{1, 1\}$, $B = \{1, 1\}$ Because both players will only make 1 move and all possible point values are 1, the players will end the game with equal scores. Thus, we print **Tie** on a new line.

Test Case 1: $A = \{2, 2\}, B = \{3, 3\}$

Because both players will only make 1 move and all the possible point values for P_2 are greater than all the possible point values for P_1 , P_2 will win the game. Thus, we print **Second** on a new line.

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Submissions:1030
Max Score:40
Difficulty: Medium
Rate This Challenge:
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Current Buffer (saved locally, editable) & 🗸 🖸
                                                                                            Java 7
 1 ▼ import java.io.*;
 2 import java.util.*;
    import java.text.*;
    import java.math.*;
    import java.util.regex.*;
 7 ▼ public class Solution {
 8
 9 ▼
         public static void main(String[] args) {
10
             /* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. */
11
    }
12
                                                                                                                     Line: 1 Col: 1
                       Test against custom input
                                                                                                         Run Code
                                                                                                                      Submit Code
Upload Code as File
```

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