

Round C APAC Test 2017

[A. Monster Path](#)

[B. Safe Squares](#)

[C. Evaluation](#)

D. Soldiers

[Questions asked](#)

Submissions

Monster Path

7pt	Not attempted 752/1194 users correct (63%)
8pt	Not attempted 655/740 users correct (89%)

Safe Squares

6pt	Not attempted 1460/1651 users correct (88%)
13pt	Not attempted 621/1296 users correct (48%)

Evaluation

12pt	Not attempted 625/943 users correct (66%)
15pt	Not attempted 552/615 users correct (90%)

Soldiers

16pt	Not attempted 106/239 users correct (44%)
23pt	Not attempted 24/63 users correct (38%)

Top Scores

johngs	100
NAFIS	100
nathanajah	100
asdsteven	100
hello92world	100
pkwv	100
Sumeet.Varma	100
akulsareen	100
nhho	100
aguss787	100

Problem D. Soldiers

This contest is open for practice. You can try every problem as many times as you like, though we won't keep track of which problems you solve. Read the [Quick-Start Guide](#) to get started.

Small input
16 points

Solve D-small

Large input
23 points

Solve D-large

Soldiers

General Alice and General Bob are playing a war game. There are **N** soldiers in the game. Each soldier has two stats: attack and defense.

Before the game starts, General Alice and General Bob will take turns selecting soldiers, with General Alice going first. In each turn, a player can select one soldier, as long as that soldier either has an attack stat greater than each of the attack stats of all soldiers selected so far, *or* has a defense stat greater than each of the defense stats of all soldiers selected so far. To be precise: let **A_i** and **D_i** be the attack and defense values for the *i*-th soldiers, for *i* from 1 to **N**, and let *S* be the set of soldiers that have been selected so far. Then a player can select soldier *x* if and only if at least one of the following is true:

- **A_x** > **A_s** for all *s* in *S*
- **D_x** > **D_s** for all *s* in *S*

If no selection can be made, then the selection process ends and the players start playing the game.

General Alice wants to select more soldiers than General Bob, and General Bob wants to avoid that. If both players play optimally to accomplish their goals, can General Alice succeed?

Input

The first line of each case contains a positive integer **N**, the number of soldiers. **N** more lines follow; the *i*-th of these line contains two integers **A_i** and **D_i**, indicating the attack and defense stats of the *i*-th soldier.

Output

For each test case, output one line containing Case #*x*: *y*, where *x* is the test case number (starting from 1) and *y* is YES or NO, indicating whether General Alice can guarantee that she selects more soldiers than General Bob, even if General Bob plays optimally to prevent this.

Limits

$1 \leq T \leq 10$;
 $1 \leq A_k, D_k \leq 10000$.

Small dataset

$1 \leq N \leq 200$.

Large dataset

$1 \leq N \leq 4000$.

Sample

Input	Output
3	Case #1: NO
3	Case #2: YES
10 2	Case #3: YES
1 10	
10 3	
3	
10 1	
10 10	
1 10	
3	
10 2	
1 10	
4 9	

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