apac test powered by Google Code Jam Practice Mode

Problem C. Sort a scrambled itinerary

Round D APAC Test

A. Cube IV

B. GBus count

C. Sort a scrambled itinerary

D. Itz Chess

Questions asked 4

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
11 points

Download C-small-practice.in

your output file: Choose File No file chosen

source file(s): not needed for the practice contest

Submit file Hide

Large input
15 points

Download C-large-practice.in

your output file: Choose File No file chosen

source file(s): not needed for the practice contest

Submit file Hide

Problem

Once upon a day, Mary bought a one-way ticket from somewhere to somewhere with some flight transfers.

For example: SFO->DFW DFW->JFK JFK->MIA MIA->ORD.

Obviously, transfer flights at a city twice or more doesn't make any sense. So Mary will not do that.

Unfortunately, after she received the tickets, she messed up the tickets and she forgot the order of the ticket.

Help Mary rearrange the tickets to make the tickets in correct order.

Input

The first line contains the number of test cases **T**, after which **T** cases follow.
For each case, it starts with an integer **N**. There are **N** flight tickets follow.
Each of the next 2 lines contains the source and destination of a flight ticket.

Output

For each test case, output one line containing "Case #x: itinerary", where **x** is the test case number (starting from 1) and **itinerary** is sorted list of flight tickets which represents the actual itinerary. Each flight segment in the itinerary should be outputted as pair of source-destination airport codes.

Limits

$1 \le \mathbf{T} \le 100$.
For each case, the input tickets are messed up from an entire itinerary bought by Mary. In other words, it's ensured can be recovered to a valid itinerary.

Small dataset

$1 \le \mathbf{N} \le 100$.

Large dataset

$1 \le \mathbf{N} \le 10^4$.

(The segment for second case in sample can be seen as below) MIA-ORD, DFW-JFK, SFO-DFW, JFK-MIA

Sample

Input	Output
2 1 SFO DFW 4 MIA ORD DFW JFK SFO DFW JFK MIA	Case #1: SFO-DFW Case #2: SFO-DFW DFW-JFK JFK-MIA MIA-ORD