Challenge 7 - Yes we scan

You work for the NSA and your mission is to monitor the two most dangerous terrorists in the world: terrorist A and terrorist B. For doing this you will have to develop a system that monitors phone calls worldwide. When your system detects that a person calls another person, you mark them as contacts. If your system detects at any given time that terrorist A can reach terrorist B through a list of contacts, it must raise an alarm immediately!

Problem

Given a log of phone calls represented as a pair of integers (where each integer is the ID of a person), and given the ID of terrorist A and terrorist B, write a program that prints “Connected at <phone_call_index>” where <phone_call_index> is the index of the phone call in the log (starting at 0) at which terrorist A and terrorist B become connected through a list of contacts, or prints “Not connected” if terrorist A and terrorist B are not connected after processing all phone calls.

The phone call log consists of a file with 10^6 lines, where each line is a pair of integers `X` and `Y` separated by one space, representing a phone call between `X` and `Y`, with `0 <= X < 10^9` and `0 <= Y < 10^9`. The phone call log is always the same and can be downloaded here:

- phone_call.log.gz

The terrorist IDs are provided as two integers, one per line, as the problem’s input.

Example 1:

Phone call log (assuming it contains only 4 phone calls):

```
2 0
1 2
1 4
3 4
```

Input (the IDs of the terrorists):

```
0
4
```

Output:

```
Connected at 2
```

The ID of terrorist A is 0 and the ID of terrorist B is 4, so we have to find at which phone call person 0 and person 4 become connected by a list of contacts.

- The first phone call (index 0) is between person 2 and person 0, so 2 and 0 are marked as contacts. 0 and 4 are not yet connected at this point.
- The second phone call (index 1) is between person 1 and person 2,

so now person 0 is connected to person 2 directly and to person 1 through person 2, but still not connected to person 4.
- The third phone call (index 2) is between 1 and 4, so now there's a connection between 0 and 4, because 0 can reach 4 through 2 and 1 (0 -> 2 -> 1 -> 4). Since the phone call at index 2 is the one that connected terrorist A to terrorist B, we print "Connected at 2".

Example 2:

Phone call log (assuming it contains only 4 phone calls):

```
0 3
1 0
2 999999999
1 0
```

Input (the IDs of the terrorists):

```
0
999999999
```

Output:

```
Not connected
```

Because 0 and 999999999 never become connected after processing the 4 phone calls. Notice that phone calls could be repeated.

Submit & test your code

To test and submit code we provide a set of tools to help you. Download contest tools if you haven't already done that. You will then be able to test and submit your solution to this challenge with the challenge token.

```
Challenge token: Vb0uKhIn_LEVyCnLRbwS
```

To test your program

```
./test_challenge Vb0uKhIn_LEVyCnLRbwS path/program
```

A nice output will tell you if your program got the right solution or not. You can try as many times as you need.

To submit your program to the challenge

```
./submit_challenge Vb0uKhIn_LEVyCnLRbwS
path/source_pkg.tgz path/program
```

Note that you first need to solve the test phase before submitting the code. During the submit phase, in some problems, we might give your program harder questions, so try to make your program failsafe.

Important: In this phase, you must provide the source code used to solve the challenge and, if necessary, a brief explanation of how you solved it.

Remember **you can only submit once!** Once your solution is submitted you won't be able to amend it to fix issues or make it faster, so please be sure your solution is finished before submitting it.

If you have any doubts, please check the info section.

Go ahead

I'm done! :)

Once you have submitted your code, hit refresh and continue to next challenge.

I'm stuck! :(

Be sure you follow the Tuenti Engineering twitter for updates and possible hints during the contest.

If this challenge is too hard and you are blocked, you will be able to skip it after two hours. Note that **you won't be able to complete it later**, and you have a limited number of challenges to skip.

Finally, if you run out of skips but are still really stuck with one problem, you will be able to skip it after 24 hours.

Challenge status:

Test case	Not done
Solution submitted	Not done
Skip	You still have to wait 0h, 30m and 0s to be able to skip this challenge

Refresh status

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