



Bookmarks

▶ [How To?](#)▶ [Week 1](#)▶ [Week 2](#)▶ [Week 3](#)▼ [Week 4](#)

[Algorithms on
Graphs](#)

[4th Week
Problems](#)

[due Dec 4, 2016 22:00
CET](#)

[4th Week
Problems: Training](#)

▶ [Week 5](#)

Week 4 > 4th Week Problems > Football Broadcasting

Football Broadcasting

[Bookmark this page](#)

Football Broadcasting

2.0/2.0 points (graded)

Input file:	broadcast.in
Output file:	broadcast.out
Time limit:	2 seconds
Memory limit:	256 megabytes

For broadcasting of the final game of the ACM ICPC World Football Cup, where Brahmany and Gerzil competed for being the world champion, the best possible film crew was hired. However, despite the highest possible quality, it was found that, throughout the entire game, one of the Brahmany's players never appeared on the screen. However, the coach is interested in viewing actions of all his players, including the missed one.

For simplifying the problem let's think that the football field is a $W \times H$ rectangle consisting of cells. Every second, every player moves from one of these cells to another cell, so that these cells have a common side. The broadcasting is a sequence of N frames, one per second, such that in the i -th frame a subrectangle of the field is seen. We don't care about contents of these frames, however, because the player, which we are interested in, is never seen on any of them.

Your task is to help the coach and to restore one of possible routes, which the invisible player could follow.

Input

The first line of the input file contains two integers W and H ($1 \leq W, H \leq 300$), the width and the height of the field. The second line contains an integer N ($1 \leq N \leq 300$), the number of frames.

The following N lines contain four integer numbers each: x_{i_1} , y_{i_1} , x_{i_2} and y_{i_2} ($1 \leq x_{i_1} \leq x_{i_2} \leq W$, $1 \leq y_{i_1} \leq y_{i_2} \leq H$). These numbers determine the part of the football field which is visible on the i -th frame of the broadcast. All cells

with coordinates (x,y) , such that $x_{i_1} \leq x \leq x_{i_2}$ and $y_{i_1} \leq y \leq y_{i_2}$, are visible on the i -th frame.

Output

If it is possible to restore a route which the invisible player could follow, output N lines. Each of these lines should contain two integers x_i and y_i ($1 \leq x_i \leq W$, $1 \leq y_i \leq H$), the coordinates of the player for the i -th second.

If it is impossible to restore such a route, output "Impossible".

Examples

broadcast.in	broadcast.out
3 2	1 2
5	2 2
1 1 2 1	2 1
2 1 2 1	3 1
2 2 3 2	3 2
2 2 3 2	
2 1 2 2	

No file chosen

Accepted

You have used 5 of 200 attempts

Discussion

Topic: 08: 4th Week Problems / Football Broadcasting

[Show Discussion](#)

© All Rights Reserved



© 2016 edX Inc. All rights reserved except where noted. EdX, Open edX and the edX and Open EdX logos are registered trademarks or trademarks of edX Inc.

POWERED BY
OPENedX[®]

