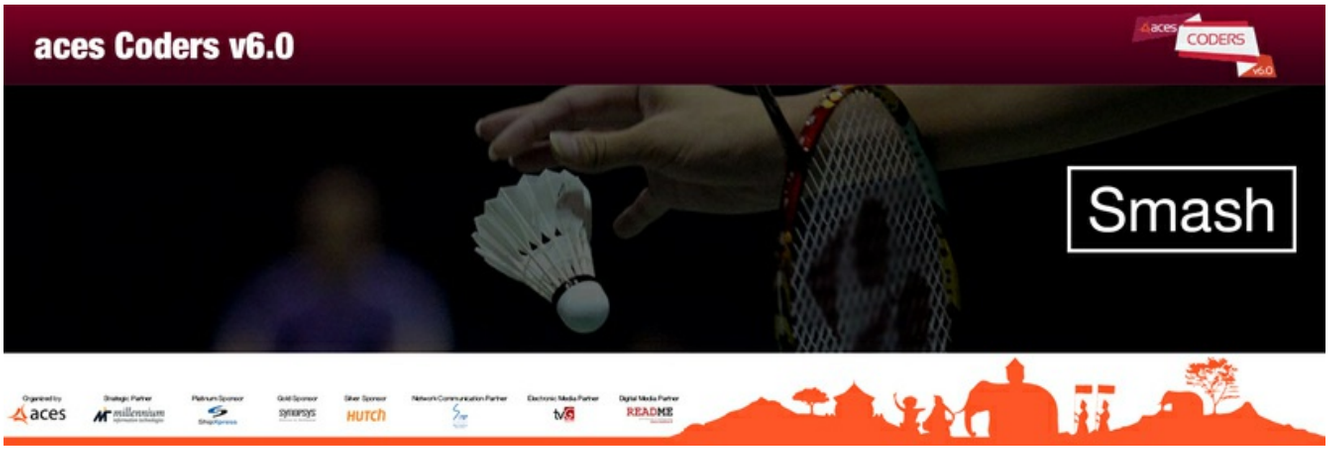
Smash



Robocon is an annual robotics competition where university students all around the globe participate. Faculty of engineering of university of Peradeniya has represented Sri Lanka in this contest in the last few years and has been in the top 10 finalists a few times. Each year the robots had to be designed to complete a set of tasks. This year the robots have to play badminton. Dimensions of the badminton court is given in Figure 1. Badminton net is 1.5 meters high.

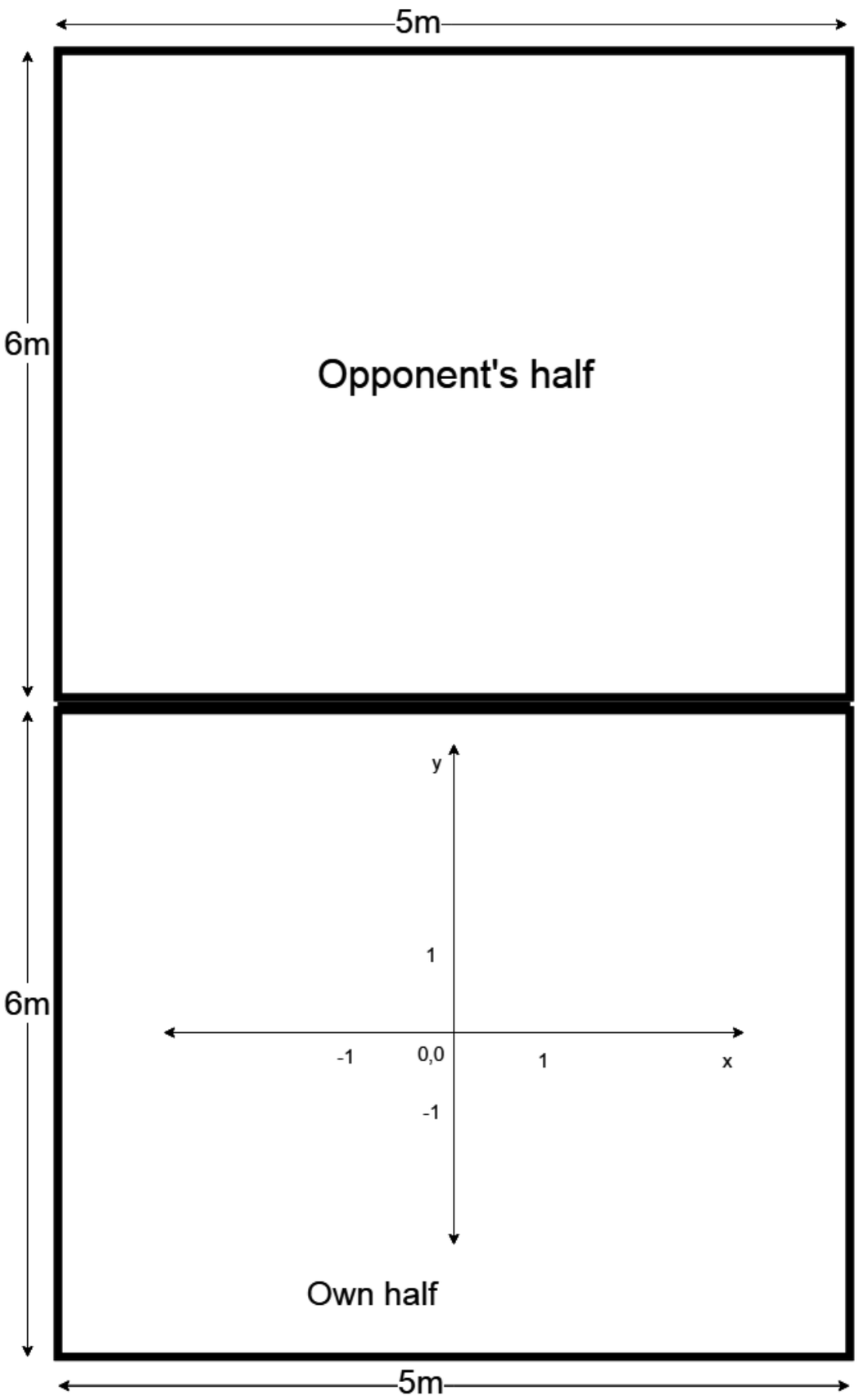


Figure 1: Dimensions of the Badminton court.

To make the game easy, rules are simplified from the actual badminton rules. Service courts and service lines are taken out of the equation. A player loses if he is unable to smash or put the shuttlecock into the playing half of the opponent. This may occur due to,
1.Shuttlecock drops inside own playing half
2.Shuttlecock hits the net
3.Lineout (Shuttlecock drops out from the playing half of the opponent after smashing)

The team designed and started building the robot. One of the critical task of this kind of scenario is to find the path of the shuttle and position the robot in the correct point to intersect the shuttle.

Team decides to use stereo vision technology in the robot. Stereo vision is using two cameras simultaneously in image and video processing. This is very similar to the behaviour of the human vision and with this technology distance calculations can be done with a good precision.

Another member of your team is assigned to identify the shuttlecock from the captured images by processing the image. Stereo cameras take video footage and identify the time which the opponent robot plays the shuttle. Then it takes 2 sets of images with an interval of 50ms between them. (You get two images at time t and then another two at time t+50). Then the programme written by your friend identifies the shuttle in each image and outputs the position as (a,b) coordinates of a cartesian plane considering the center of the image as origin. Values of both a and b are in millimeters (mm). Both cameras are identical and has a focal length (f) of 5cm. Figure 2 & 3 shows f, a, b and the distance 'd' between the two cameras.

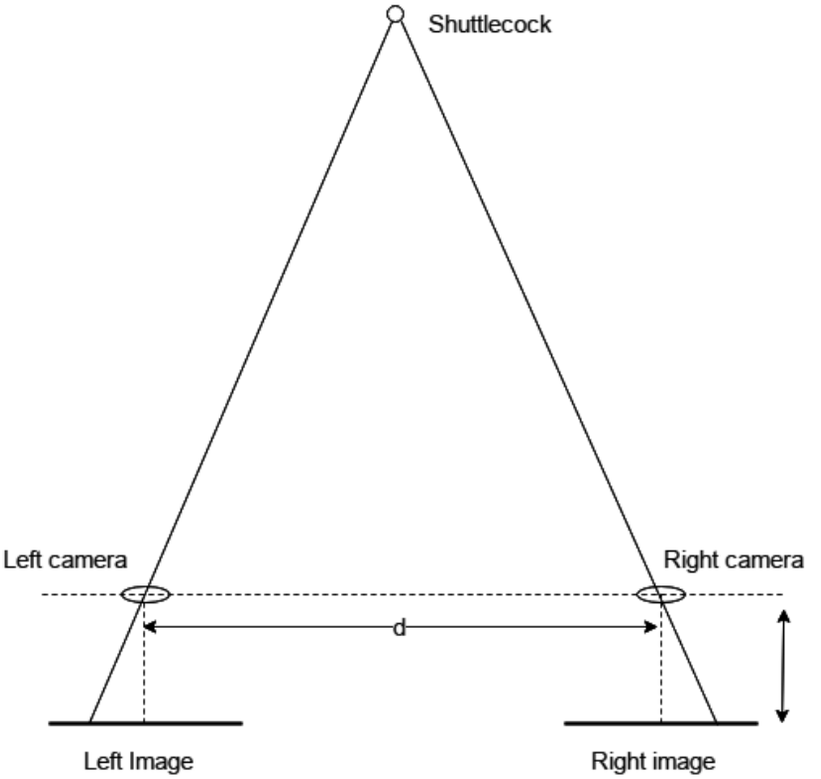


Figure 2: Stereo cameras and dimensions

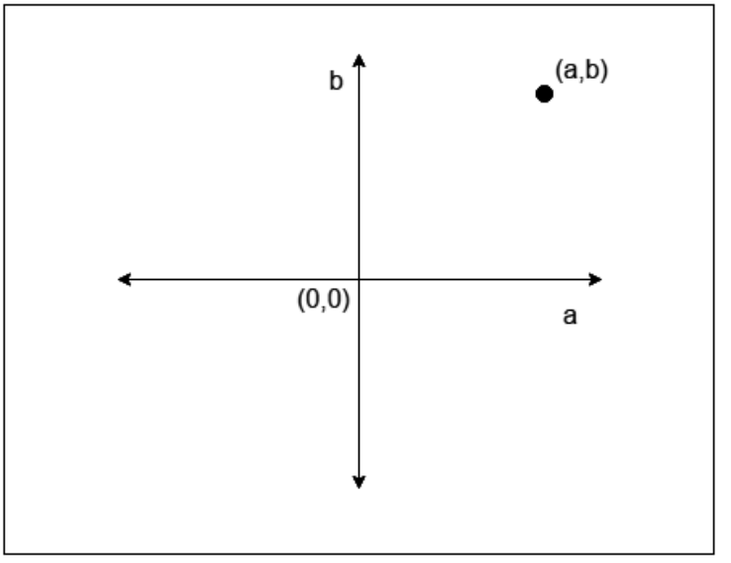


Figure 3: Origin and axes of a captured image from one of the cameras

Your task is to find the position where the robot has to smash the shuttle. Robot is designed to have the smashing point (where the racket meets the shuttle) to be exactly one meter above the ground level. Initially robot stays exactly at the center of its playing half until the second set of images are captured.

Cameras are aligned in a horizontal line **1 meter** above the ground and parallel to the net. You may assume that optical axes of the cameras are horizontal and perpendicular to the net while taking images. Also you can assume that the shuttle does not slow down through air and you may take g = 10ms-2.

No partial marks for this problem

Input Format

d - First line contains an integer denominating the distance between cameras in millimeters (distance between vertices of the camera lenses)

Then following two lines describe two image sets (4 images). Second and third lines describe the first and second image sets each by 4 decimal numbers separated by spaces.

All these numbers represent the coordinates of the shuttle considering center of the image as origin and in millimeters. See figure 3.

a(1,L) b(1,L) a(1,R) b(1,R)
a(2,L) b(2,L) a(2,R) b(2,R)

Here a(1,L) and b(1,L) denote the coordinates of the first image taken from the left camera.

Constraints

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Output Format

If the shuttle lands inside the playing area, output **(x,y)** coordinates of the horizontal plane 1 meter above the ground level taking the center of the own playing half as the origin. (Both x and y should be integers measured in centimeters)
If the shuttle hits the net you should output '**Net**'
If the shuttle goes out of the playing area, your output should be '**Lineout**'. (Remember lines are on the ground level)

Sample Input

1000
11.7600 4.7100 17.6500 4.7100
11.4600 3.1900 17.6200 3.1900

Sample Output

(28,89)

Explanation

In this case the shuttle will drop inside the playing area of the robot. Therefore the robot has to play it, attacking position or the coordinates of the path of the shuttle on the plane 1 meter above the ground level is (28,89).