9th International Competition in the Programming ICP 2001

Informations about ICP 2001

Announced by:
The Ministry of Education, Youth and Sport of the Czech Republic

Guaranteed by:
The Institute for Children and Youth
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In collaboration with:
DellNFO Ltd., Brno
The Station of Technicians Vysehrad, Prague

General sponsors:
Microsoft s.r.o.
Borland s.r.o.

Conditions for participants:
- Age: 16-19 years
- Successful completion of the correspondence stage
- Ability to discuss problems in English
- Closing-date is May 15th, 2001

Programming languages:
Visual Basic, C, C++, Delphi, Pascal under OS Windows (DOS), Java

Problem solution:
Send source code of solution together with executable program on floppy disc (do not forget to include backup copy) or via e-mail (as zip or tar.gz archive) to the address below. Include your name, address and date of birth.

The Programme of the competition:
The jury will select the twenty best entrants, who will participate in the finals. At this stage the competitors will attempt to solve various problems within a specified time. All finalist will receive a certificate of attendance. And prizes will be awarded to the best competitors.

The Date of the final:
October 2001, at The Invex Computer 2001 fair, Brno, Czech Republic.

Accommodation:
Accommodation and meals will be provided by the organizers. Travel expenses will not be covered.

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Problem of correspondence stage:
TV Game Box Simulator

Historical background: TV Game Box was an ancestor of PlayStation. It was a box connected to common TV and equipped with one or two joysticks. Most commonly played game was tennis for two players -- see Figure 1.
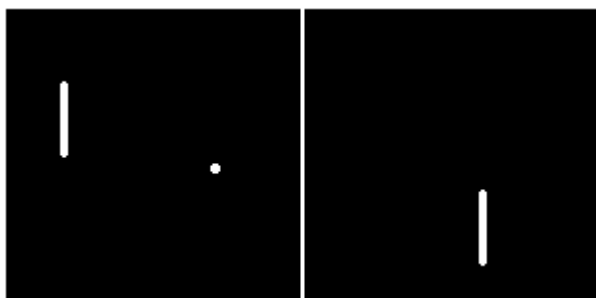

Figure 1: TV Game Box Example

Write a program which will simulate TV Game Box on a personal computer. The playing-field is composed from two adjacent squares -- one for each player. One player is simulated by the computer. Human player can control his bat by mouse or using the keyboard depending on his selection. Both ways can be used simultaneously. The bat can be moved in both vertical and horizontal direction. The program will not allow to place the bat outside of the playing-field.

Before the game starts it is possible to set width of the bat as a percentage of the playing-field side length. Points are counted according to the normal tennis rules. The score is continuously displayed. The program will evaluate wins and losses.

The program takes into account dynamics of strike, rotated balloons, air resistance and whatever else you think is appropriate.

In addition to a single player mode following game modes are supported:

- *Network version for two players.* The game can be played over TCP/IP network for two players on two computers.

- *Network version for four players.* The program allows to play double for four players on four computers over TCP/IP network.

  Double is made difficult by splitting partners playing area into four quadrants (see Figure 2). In one quadrant there can be only one player at the same time.

- *Network version for two human players and two simulated players.* The program allows to play double over TCP/IP network for two players on two computers against computer simulating two rivals.
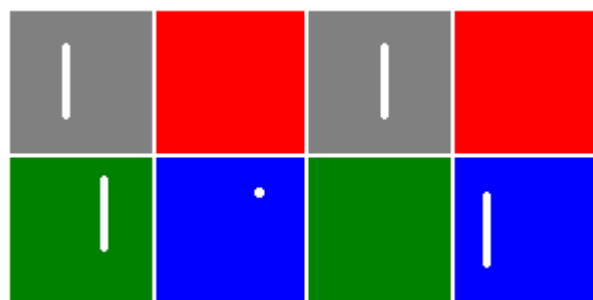

Figure 2: Division of playing-field for double