CLA Summit 2018 Coding Competition

tronview

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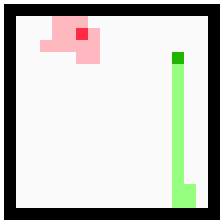
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# Game basics

tronview is a game where two players move through the board, leaving behind an impenetrable wall. When a player hits one of these walls, they crash and have lost the game. To win, you must outlive your opponent.

* The game is played on a square board which consist of NxN fields. The board is limited by the walls.
  + Board size is decided at the beginning of the game.
  + Minimum board size is 16x16, maximum is 48x48.
* Bots start at random positions on the board.
* The game is played in turns. In each turn each bot makes move (N, E, S or W), leaving the wall on the field it left.
  + Bots move simultaneously.
* If the move finishes in the field with wall, bot losses.
* The game results in a draw when:
  + Both bots moves into a wall in the same turn.
  + Both bots moves into the same field in the same turn.



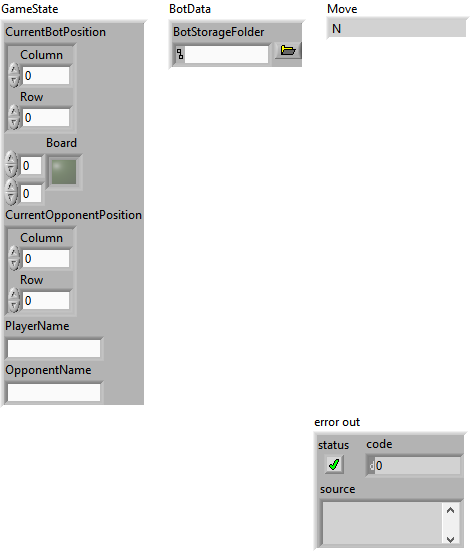
Example game board where green bot wins (red bot has crashed into it's own wall)

Technical details

## Quick start

1. Download the game code.
2. Run the Example\_Game.vi. It will open another VI front panel where the game takes place.
3. Copy the TemplateBot.lvlib and its contents. Rename it to YourName.lvlib (YourName = your name ☺)
4. Implement the Bot.vi
5. In the Example\_Game.vi, replace one of the bots with a path to your bot folder.
6. Have fun!

## Bot.vi



|  |  |  |
| --- | --- | --- |
| INPUTS | | |
| GameState | CurrentBotPosition | Current position of your bot. |
| Board | Current state of the fields on the board.  False = field is not occupied.  True = field is occupied. |
| CurrentOpponentPosition | Current position of opponents bot. |
| PlayerName | Your name. |
| OpponentName | Your opponents name. |
| BotData | BotStorageFolder | The folder in which the bot may store any persistent data it wants.  This folder will stay the same during entire competition. |
| OUTPUTS | | |
| Move | | The move your bot make in this turn. |
| Error out | | Error returned by your bot. Error will be logged, so you may use it for further investigation during development. |

# Competition format

**Competition format is provisional and is subject to change before final release.**

* **The competition will be split into two parts: round-robin round and knock-out round.**
* **In round-robin round each bot will play multiple games with each other.**
  + **Standings will be based on the points gained by bots: winner of each game will gain 2 points, loser 0 points. If the game ends with a draw, each bot will gain 1 point.**
* **Best X bots will advance into knock-out round.**
  + **Bots will be paired and will play multiple games. Winner will advance to next round, and the process will be repeated until the final between two bots.**