Assignment 4
Group 1
Part 3

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Explanation of Changes

GUI - we anticipated using two different classes for the overall GUI, since there would be at least two different windows (menu and the actual game), but we realized that it made more sense to consolidate these windows into a single class.

Gui_contracts - because of the changes made to GUI, there were also changes made to the contracts. Certain contracts were modified, added, or removed based on new understanding of gtk or as a result of overall design changes.

Explanation of Additions

game_controller - game_controller.rb was added to replace the role that we anticipated driver would have. Initially, we thought that we could just run the GUI in a driver file and have the driver handle the logic, but we realized that due to the nature of our GUI, we needed the controller in the form of a class (GameController) so that it could be called at the proper times.

game_controller_contracts - game_controller_contracts.rb was added to supplement game_controller.rb.

Design Rationale

Recorded here is some of our design decisions and other rationale for certain contentious features in the game.

We decided against implementing a function to Undo past moves, due to the fact that we felt that having the ability to remove already placed tokens could potentially be a form of cheating, and rob the game of it's integrity.

There are concessions made in the code such that extending a game mode such as Connect4 to something like Connect5, Connect6, etc would be fairly easy. Pre/post conditions as well as invariants are already in place to accommodate such functionality. While such custom game mode are realizable in the Command Line implementation of the game, there is currently no such functionality present in the GUI version of the game. We did not feel that this functionality was necessary for this assignment, since the proof of concept is already there, and we opted to refine certain elements of the GUI itself over adding this.

There are other features in the CLI that are not implemented in the GUI, such as the ability to change what your token is.

Both the GUI and the CLI allow changing the dimensions of the board, changing the player name, as well as playing against humans and AI.

Functionality - For Reference

To run the game, run either “ruby driver.rb” or “ruby assignment4_main.rb” for the GUI game, or just “ruby game_driver.rb” for the CLI game.. Once the game starts, you will be presented with a menu allowing you to select your game mode (for this assignment, Connect4 or TOOT/OTTO), the number of players (1 for vs AI, 2 for vs another player), and the desired dimensions of the game board. From here, hit “Start Game” and the game will begin. Press a button on the top of each column to place a token in that spot. If you are facing the AI, the AI will automatically take it’s turn after you - otherwise, the game will switch to Player 2’s turn. Once the game is won, or the game cannot continue due to the board being filled or some other condition, a relevant status screen will be displayed.