



Connect 4

Material

- This game is played on a vertical board which has seven hollow columns and six rows. Each column has a hole in the upper part of the board, where pieces are introduced. In short, it's a matrix with 6 rows and 7 columns
- Both players have a set of 21 pieces (like coins), each set coloured red and green respectively; each player is going to have a different colour set of pieces
- Game state
 - Each player has a list of the positions of the pieces the player places
 - The player id whose turn it is

Game Objective

- To be the first player to get 4 pieces in a row horizontally, diagonally or vertically

Initial State

- The computer creates an empty board and randomly chooses which player to start
- The player who starts first, is going to play with green pieces, the other player with red pieces
- Initialize the game state

How the game goes on

- Players take turns, and place one piece on the desired column (of the 7 in total)
- Pieces slide downwards from the top of the board, falling down to the last row or piling up on the last piece introduced in the same column.
- At each turn
 - On his turn the player has 1 minute to choose a column to drop the piece
 - If time is up, the game enters the final state and the loser is the player whose time is up
 - The column chosen by the player must be a valid one, meaning not to be full(all rows have pieces)
 - The piece is dropped to the lowest empty row on the chosen column
 - The computer checks for a winning state by examining the board, if a winning state is found the game enters the final state, the winner being the player which has 4 pieces in a row
 - Checking for 4 slots occupied by the same pieces of the same player horizontally, vertically or diagonally

Final State

- Destroy the game materials
- Display corresponding message to the loser("YOU LOST") and the winner("YOU WON")
- Save the game stats(winner, loser, number of pieces placed for each) in the game history
- Update the statistics for each player, add a lose to the loser and a win to the winner

Miscellaneous

- On player disconnect, start 30s and wait for player to return
- If timer ends the game enters the final state, the winner is the player waiting