



Obstruction

Material

- The game is played on a grid with size ranging from 5×5-10×10 (eg. 5×6, 7×8)
- The positions on the grid can be occupied by symbols of X and O representing one player
- Dictionary containing the game state
 - Each player has a list of the cells of the pieces the player places
 - The player id whose turn is up
 - The grid size

Game Objective

- To be the last player that is able to place a piece on the grid

Initial State

- Each player enters its desired grid size(between 5×5-10×10), the computer randomly chooses between the 2 given options
- The computer creates an empty grid of the chosen size and randomly chooses which player to start
- The player who starts first is assigned X and the other one O
- Initialize the game state

How the game goes on

- The players take turns in placing their symbol in an empty cell. Placing a symbol blocks all of the empty surrounding cells in the proximity of one square including the diagonals, from both players, indicated by shading them.

- A player can only mark a square if it is valid = if it is not marked or shaded
- At each turn:
 - On his turn, the player has a 1 minute timer to make a move
 - If time is up, the game enters the final state and the loser is the player whose time is up
 - The player chooses a position on the grid to mark down that must be checked
 - If the position is not valid, the player can select a different position until they choose a valid one(selecting an invalid position will not change anything)
 - The position is marked by the player's symbol and the surrounding available cells are shaded
 - The computer checks for a winning state, that is if there are no valid cells for the next move (all the grid's cells are either marked or shaded)

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 total moves) 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