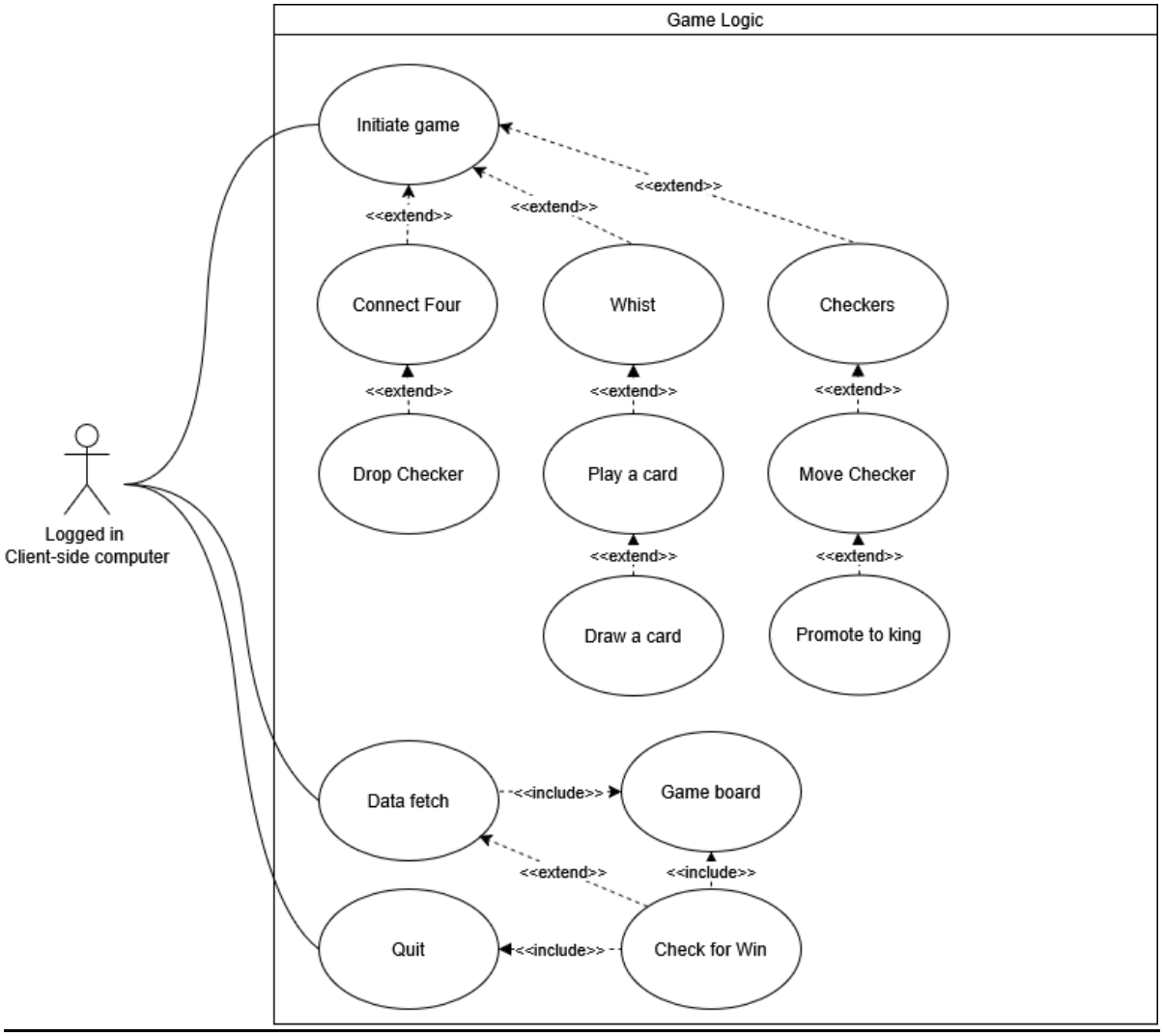
Game Logic Use Case Diagram



Initiating a Game

Iteration: 1

Primary Actor: Player

Goal in Context: Starting a game with another player

Preconditions: The player is logged in

Trigger: The player selects a game and clicks play

Scenario:

1. The game matches another player of similar skill level
2. An object of the game selected is created
3. The UI displays the game board to both players

Postcondition: The selected game is ready to play for both players
Exceptions:
1. The player is matched to themself

Priority: High
When available: First release
Frequency of Use: High, once every game
Channel to actor: Network UI update
Secondary Actors: Game host server
Channel to secondary Actors: Network
Open Issues:

Game Data Fetch by client-side Computer
Iteration: 1
Primary Actor: Client-side UI
Goal in Context: Allow the client to retrieve necessary data for gameplay
Preconditions: The player is logged in and in a game
Trigger: The player initiates a game, the game is refreshed

Scenario:
1. The computer fetches the game data
2. The UI reflects any changes

Postcondition: The user can see the updated game board Exceptions:
1. The client is attempting to fetch unauthorized data

Priority: High
When available: First Release
Frequency of Use: High, every time a game is refreshed
Channel to actor: Network
Secondary Actors: End user, game logic server

Channel to secondary Actors: UI display, network Open
Issues: What should the refresh rate be?

Dropping a Checker (Connect 4)
Iteration: 1
Primary Actor: Active player
Goal in Context: The active player dropping their checker, completing their turn
Preconditions: A valid game is active
Triggers: The beginning of the game and the end of a turn that doesn't result in the end of the game.

Scenario:

1. A game is initiated and validated
2. Player 1 makes the first move

Postcondition: The move reflected in the UI and displayed to both players

Exceptions:

1. The game is not valid, for example, a player is matched with themself
2. A player quits or disconnects, ending the game.

Priority: High, this is the core of the Connect Four gameplay.
When available: First release.
Frequency of Use: High, used multiple times every game.
Channel to actor: Network UI update
Secondary Actors: Passive player, game host server
Channel to secondary Actors: Network Open
Issues:

Moving a Checker (Checkers)
Iteration: 1
Primary Actor: Active Player
Goal in Context: The active player mover their piece to a different square in accordance with the rules of the game
Preconditions: A valid game is active
Trigger: The beginning of the game and the end of a turn that doesn't result in the end of the game.

Scenario:

1. A game is initiated and validated
2. Player 1 makes the first move

Postcondition: The move reflected in the UI and displayed to both players

Exceptions:

1. The game is not valid, for example, a player is matched with themself.
2. A player quits or disconnects, ending the game.
3. Then checker has no legal moves

Priority: High, this is the core of the Checkers gameplay.
When available: First release.
Frequency of Use: High, used multiple times every game.
Channel to actor: Network UI update
Secondary Actors: Passive player, game host server
Channel to secondary Actors: Network Open
Issues:

Promoting to a King (Checkers)
Iteration: 1
Primary Actor: Active player
Goal in Context: The active player promotes one of their men to a King
Preconditions: A valid game is active
Trigger: A man reaches the opposite end of the board

Scenario:

1. Active player moves a man to the opposite end row
2. Active player's piece is changed to a King

Postcondition: The move and promotion reflected in the UI and displayed to both players

Exceptions:

1. The game is not valid, for example, a player is matched with themself.

2. A player quits or disconnects, ending the game.
3. The player has a forced capture

Priority: High, this is a core mechanic Checkers gameplay.
When available: First release.
Frequency of Use: High, used a few times a game.
Channel to actor: Network UI update
Secondary Actors: Passive player, game host server
Channel to secondary Actors: Network Open
Issues:

Play a Card (Whist)
Iteration: 1
Primary Actor: Active Player
Goal in Context: The active player plays a card from their hand
Preconditions: A valid game is active, it is the active player's turn
Trigger: A player clicks a card in their hand on their turn

Scenario:

1. Active player has a turn in the game
2. Active player selects a card to play
3. Active player plays their card

Postcondition: The player has one less card in their hand, their card is on the table
Exceptions:

1. The active player has no cards to play

Priority: High, this is a core feature of the game When available: First release.
Frequency of Use: High, used many times a game.
Channel to actor: Network UI update
Secondary Actors: Passive player, game host server
Channel to secondary Actors: Network Open
Issues:

Draw a Card (Whist)
Iteration: 1
Primary Actor: Active Player
Goal in Context: The active player draws a card from the draw pile
Preconditions: A valid game is active, the game is in the drafting stage
Trigger: A player finishes a trick during the drafting stage

Scenario:

4. Active player has contributed to a trick in the drafting stage
5. The trick is concluded from both parties contributing
6. Active player draws a card from the deck

Postcondition: The player has one more card in their hand, the draw pile is one card smaller Exceptions:

2. The draw pile is empty

Priority: High, this is a core feature of the game When available: First release.
Frequency of Use: High, used many times a game.
Channel to actor: Network UI update
Secondary Actors: Passive player, game host server
Channel to secondary Actors: Network Open
Issues:

Ending a Game
Iteration: 1
Primary Actor: Active player
Goal in Context: Displaying to all players that the game is over, and if they lost, won or drew.
Preconditions: A game is active
Trigger: A wining, losing, or drawing move, or a player quits

Scenario:

1. The server detects that the game is over
2. The players' stats are updated
3. The UI displays to all players whether they won, drew or lost
4. The UI displays the option to leave the game

Postcondition: The game is over
Exceptions: The game will always end

Priority: High
When available: First release
Frequency of Use: High, used every game
Channel to actor: Network
Secondary Actors: Passive players, game logic server Channel to secondary Actors: Network Open
Issues: