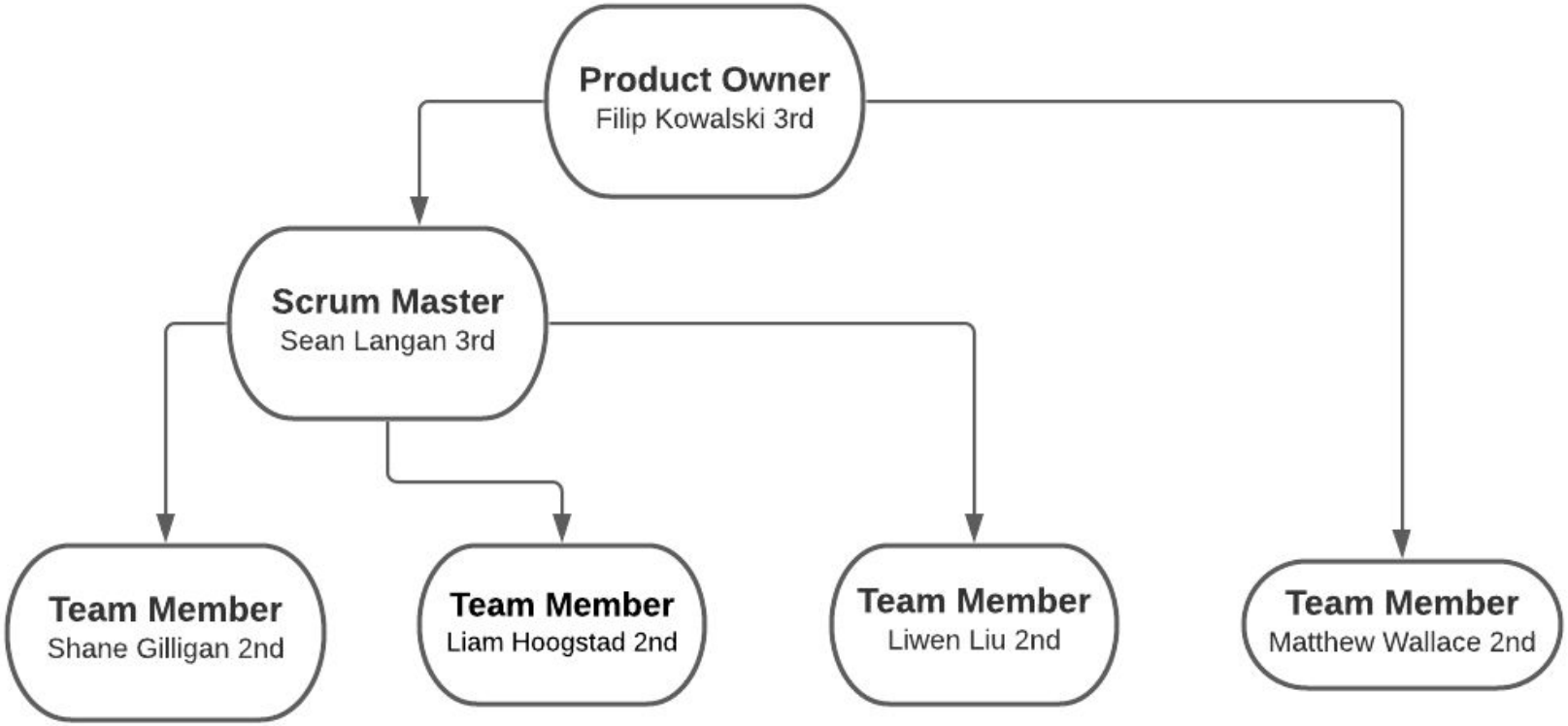
Microsoft

Augmented Reality

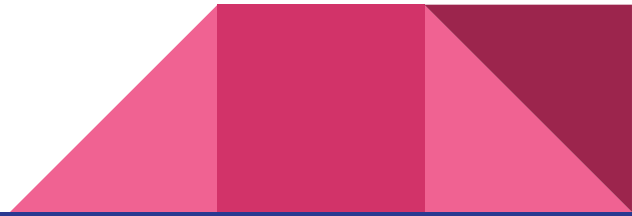
Group : 21
Client : Microsoft
Create A Mixed Reality Video Game

Our Team and Roles



Overview

- Mixed Reality- Our Project focuses on building a mixed reality video game
- Hololens- Our project will be built upon Microsoft's Hololens
- Chess- We have chosen Chess as our integratable medium, because of its turn based qualities.



Scope

The Initial Phase:

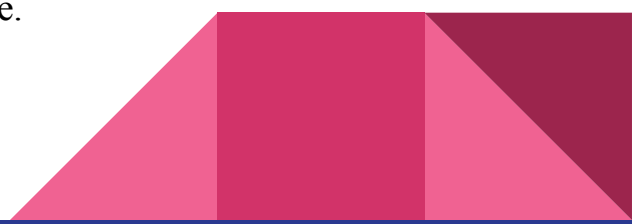
- Implementation of a backend service that can manage the game state for multiple users in a single session (lifecycles, turns, etc.)
- Implement a client app that can connect to the service and play the game.

The Intermediate Phase:

- Integrate an AI opponent service which can integrate with the work done in the initial stage to receive game state and make gameplay decisions based on this state.

The Final Phase:

- Scaling out the backend service to enable it to handle multiple game sessions, with multiple participants in each session (both human and AI) playing different games at the same time.

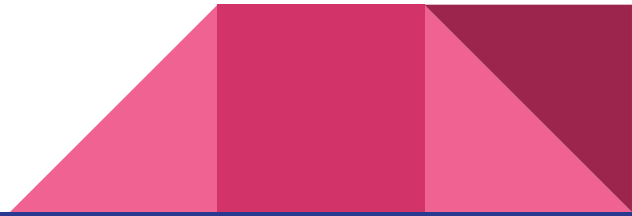


Current System

Microsoft HoloLens

Functional Requirements

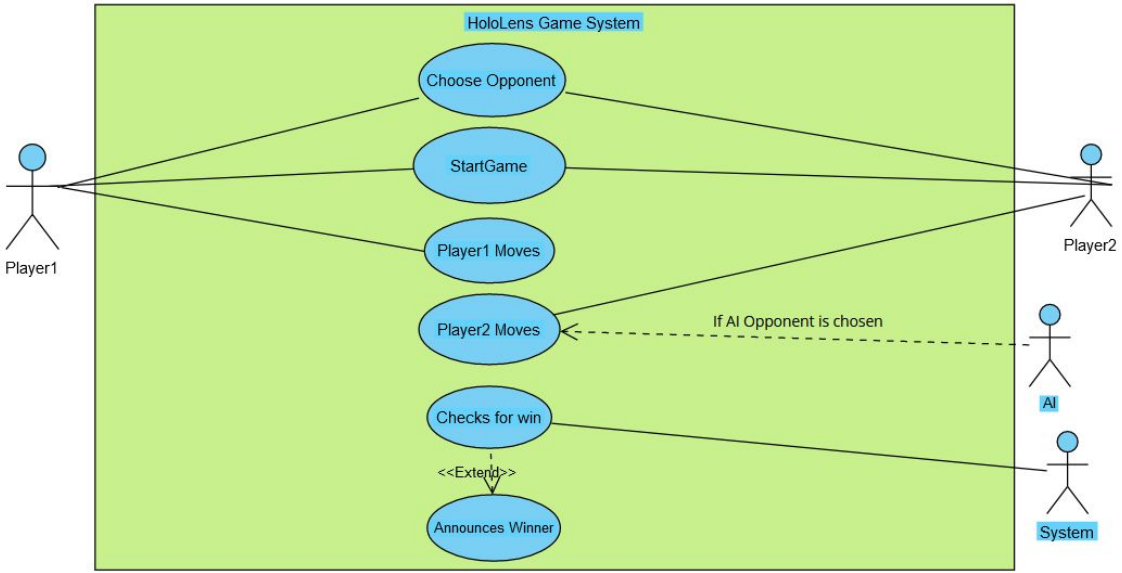
- A start screen providing initial buttons and menus to decide number of players and start the game
- The game should have an AI element for single player mode
- Accurate motion tracking of hands to keep the game immersive and interactive when using the Hololens
- There needs to be a tracker to keep score of who is winning, how many rounds have been played, accumulative scores and timers for if/when a player takes too long their turn if forfeited.
- Algorithm implementation to keep track of legal moves and remove pieces when needed from the board



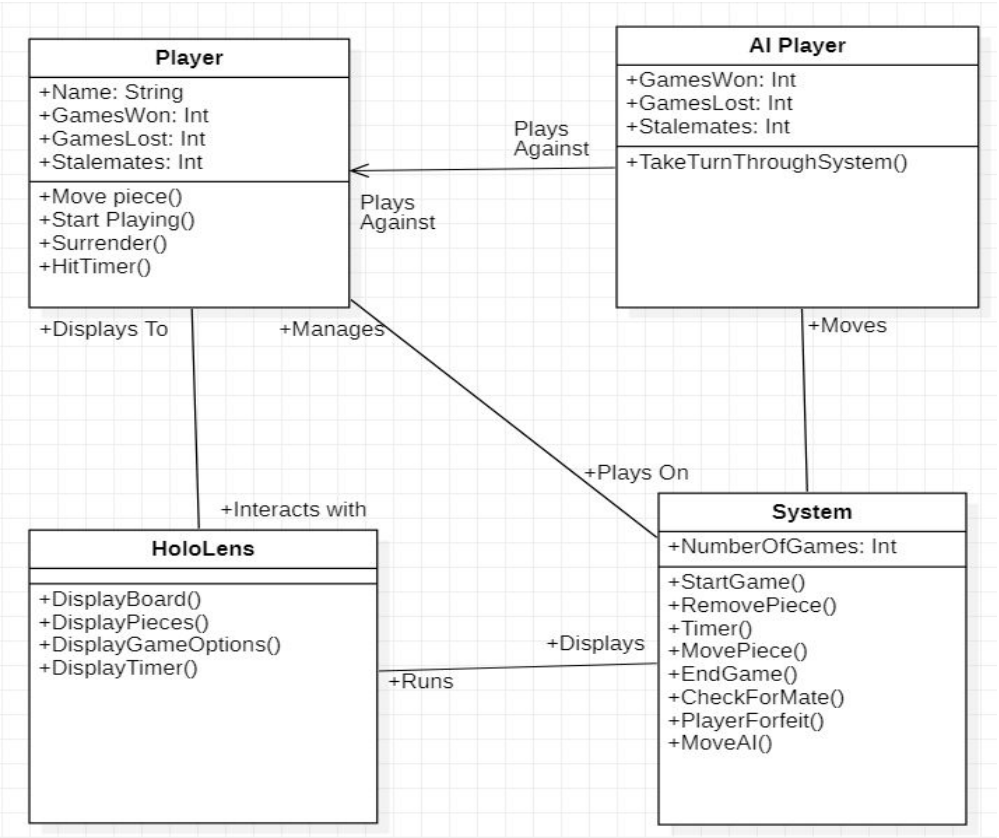
Non-Functional Requirements

- Friendly navigation and easy usability
- Well designed 3D models to avoid object clipping and keep the game immersive
- Background music/ambient backgrounds to decorate the game board and play area

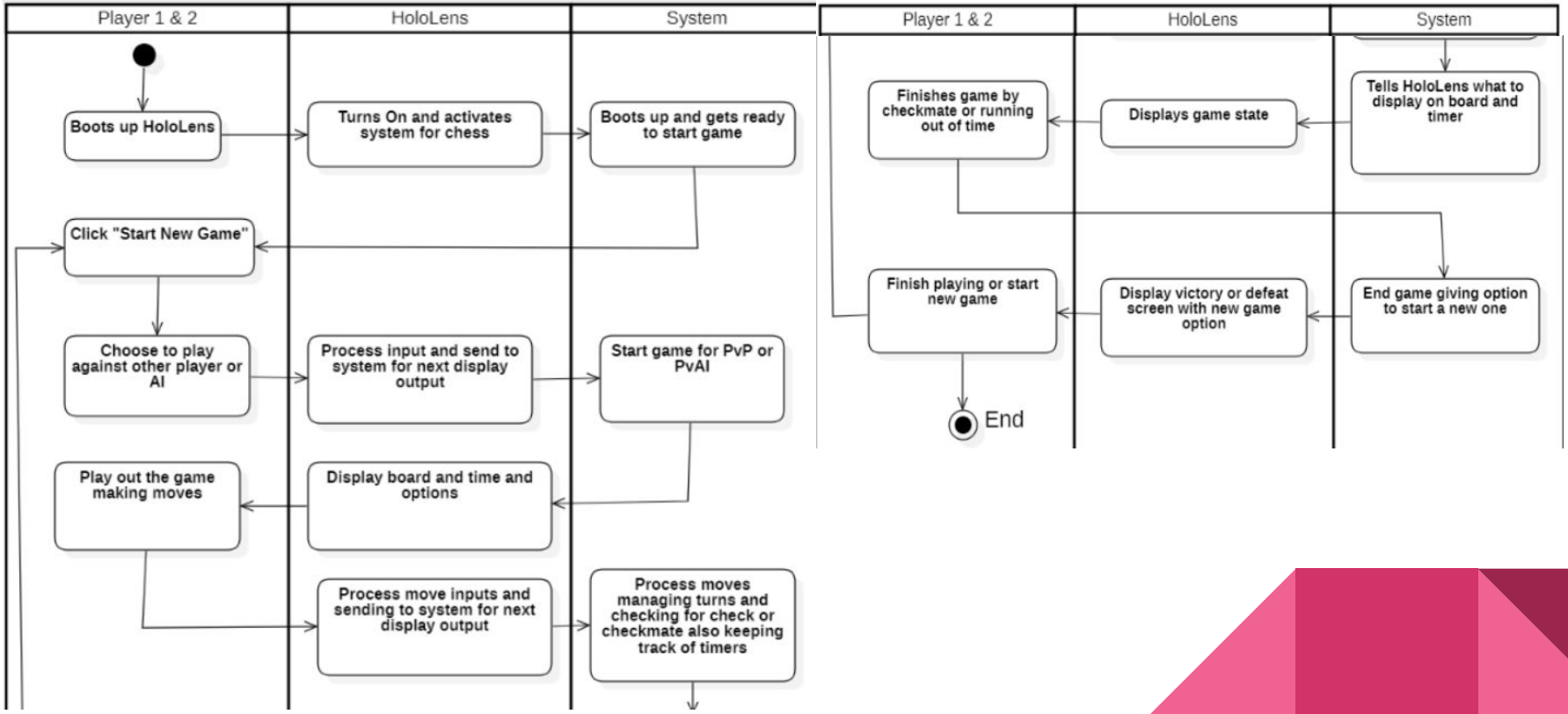
Use-Case Diagram



Object Diagram



Activity Diagram



QUESTIONS ?