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Title: Chesspionage

Project Summary: An online chess variant in which players cannot see the identity of their opponent's pieces. Players begin the game by choosing the locations of their pieces in the first two rows of their side of the board. Then, just like normal chess, players take turns moving their pieces. Based on the way the opponent's pieces move, players can begin to infer said pieces' identities. The game ends once a king is captured. Our system will allow the user to play Chesspionage as well as create basic user accounts to track player data like win-loss records.

Project Requirements:

Business Requirements: N/A

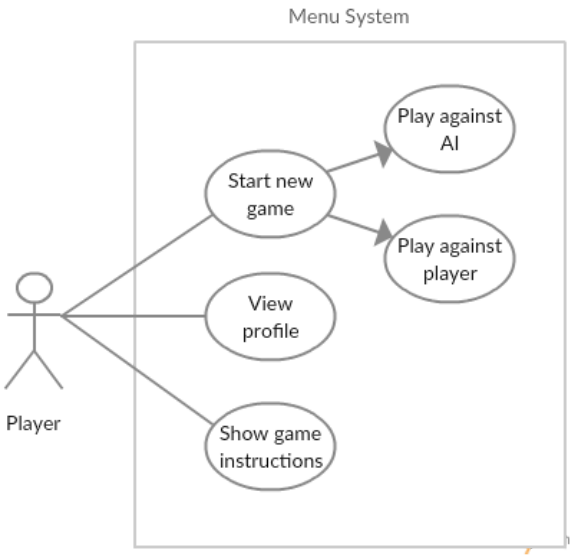
User Requirements		
ID	**Description**	**Priority**
US-01	As a player, I need to be able to start a new game so that I can play Chesspionage.	Critical
US-02	As a player, I need to be able to move pieces in their valid directions so that I can make moves to progress through the game.	Critical
US-03	As a player, I need to be able to capture opponent pieces when I land on them so that I can progress through the game.	Critical
US-04	As a player, I need to be able to hide the identity of my pieces so that my opponent cannot see them when we play locally on the same computer.	Critical
US-05	As a player, I need to be able to show the identity of my pieces so that I can view them.	Critical
US-06	As a player, I need to be able to play against an opponent on my local computer so that I can play with a friend.	Critical
US-07	As a player, I need to be able to play against an AI opponent on my local computer so that I can play by myself.	Critical
US-08	As a player, I need to be able to win the game when I capture my opponent's king.	Critical

US-09	As a player, I need to be able to view the instructions for the Chesspionage variant so that I can know how to play.	Critical
US-10	As a player, I need to be able to place my pieces on open spaces in my back two rows at the beginning of the game so that I can properly setup the board before playing Chesspionage.	Critical
US-11	As a player, I need to be able to create a user account so that I can track data linked to my user account.	Critical
US-12	As a player, I need to be able to login to my user account so that I can access data linked to my user account.	Critical
US-13	As a player, I need to be able to logout of my user account so that I can protect my privacy when I no longer wish to be logged in.	Critical
US-14	As a player, I need to be able to change my password so that I can match it to my current preference.	Medium
US-15	As a player, I need to be able to view my win loss record over previous games I have played so that I can get an idea of how good I have done thus far.	Low
US-16	As a player, I need to be able to delete my account so that I can protect my privacy if I prefer to no longer be involved in the service.	Low
US-17	As a player, I need to be able to change my username so that I can match it to my current preference.	Low

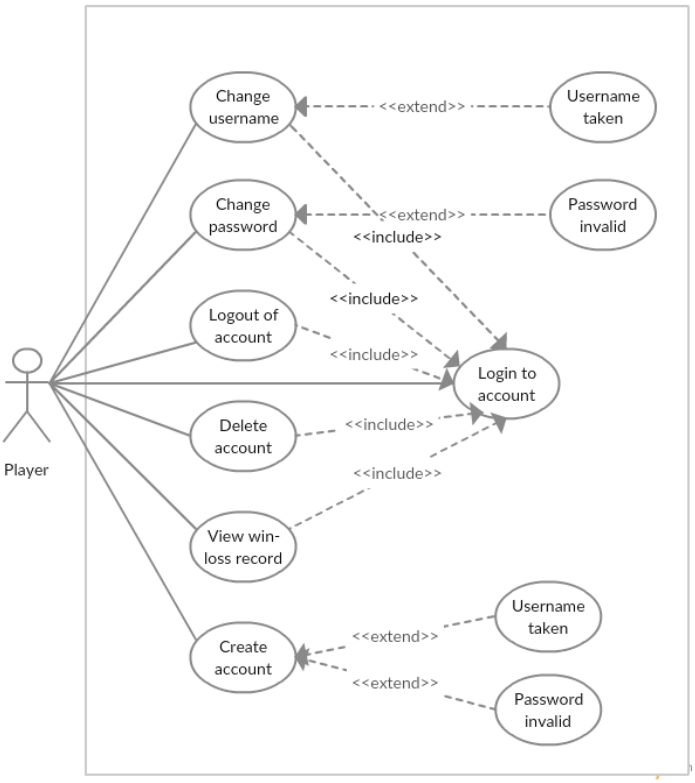
Non-Functional Requirements		
ID	**Description**	**Priority**
NFR-01	Usability: Provide easy to understand instructions on how to play Chesspionage.	Critical
NFR-02	Usability: Provide a simple user interface for the player to move pieces.	Critical
NFR-03	Reliability: The system should handle exceptions in an elegant manner (i.e. the application does not crash when it encounters an exception).	Critical
NFR-04	Reliability: The system should not lose player profile data.	Critical

NFR-05	Reliability: User account information will be encrypted for their safety.	Critical
NFR-06	Performance: No system stuttering or freezing at any time while using the application.	Critical
NFR-07	Performance: AI opponent makes a move in less than or equal to thirty seconds.	Critical
NFR-08	Supportability: Should run on most recent versions of major browsers (Chrome, Firefox, Edge, Safari).	High
NFR-09	Packaging: Webapp, user visits website to play, no installation required.	High
NFR-10	Legal: Licensed under the MIT open source license	High

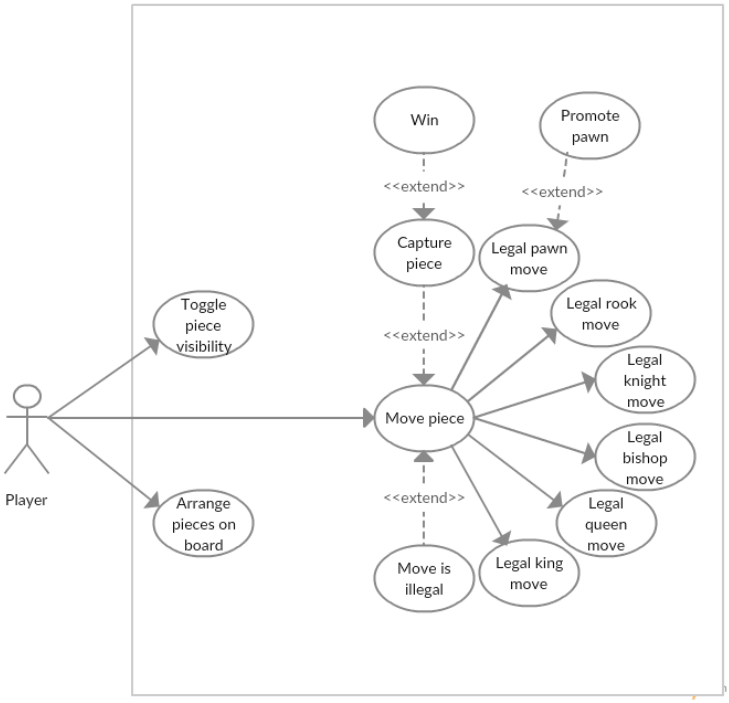
Use Cases:



Login & Profile System



Game System



UI Mockups:
https://www.figma.com/file/JIuMRwLAHwwv3sSYjPa7zHow/Chesspionage
(Links to the UI mockup in figma. It's too large and complex to fit on this page)

Data Storage:
We are going to use a MySQL database to store persistent data. We intend to persist User objects, which will include player profile information such as username, password, and wins, and losses.

Class Diagram: