SE 210: Software Specification and Design I

OnlineChess

Usage Modeling

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Introduction:

OnlineChess is an online chess playing platform that allows chess players to square off in friendly or competitive games through the web browser. Upon Starting a game, the user will be prompted to select an opponent and a time range of each turn. An *OnlineChess* match will be created and play continues until there is a winner selected, or a User concedes or the match is paused. The purpose of this document is to evaluate usage scenarios for *OnlineChess* for the following cases:

1. *Starting a Game against a computer opponent*
2. *Starting Game between a student and a teacher*
3. *Starting a Game against a random opponent*

4. *Starting a Game against a friend online*
5. *Playing a Move*
6. *Saving an active game*
7. *Match is declared over*

Each scenario will covering the following: usage details, pre and postconditions, a base course of action, and an alternate course of action.

Usage Scenarios:

Scenario 1: Starting game against computer

Usage details

The following scenario describes a case when a user starts an *OnlineChess* game against a computer opponent and the pre and post conditions needed to satisfy that requirement.

Pre-conditions

- The user of the system has an account
- The user of the system has a rank (default rank is 1200)
- The user of the system has selected a time range
- The user of the system has selected the computer game mode

Post-conditions

- The user of system has a computer opponent set to the appropriate difficulty based on the user's rank
- A new game is logged under the user record

Base Course of Action

- User Logs On to the OnlineChess system with their user account.
- User selects "Start Game vs Computer"
- User's system rank is retrieved from system.
- New game screen is displayed
- Game is initiated using a difficulty level appropriate for the user.
- System awaits user's first move (user is white).

Alternate Course of action

- User Logs On to the OnlineChess system with their user account.
- User selects "Start Game vs Computer"
- User's system rank is retrieved from system.
- New game screen is displayed
- Game is initiated using a difficulty level appropriate for the user.
- System makes the first move (user is black).

- System awaits user's first move (user is black).

Scenario 2: Starting game between a student and a teacher

Usage Details

The following scenario describes a case when a user starts an *OnlineChess* game between a student and a teacher and the pre and post conditions needed to satisfy that requirement.

Pre-conditions

- The student has an account
- The teacher has an account
- The student is registered as a member of the teacher's class
- The student is logged in
- The teacher is logged in

Post-conditions

- Both the student and the teacher are in matched in a chess game
- A new game is logged in the student record
- A new game is logged in the teacher record

Base Course of Action

- Teacher clicks "Invite Player to Game" button next to student's name.
- Student receives notification
- Student selects "accept game invitation" to accept the invitation.
- Teacher receives notification of acceptance.
- New game screen is displayed.
- System randomly selects teacher or player as white and black.
- White player is prompted for their first move.

Alternate Course of Action

- Teacher clicks "Invite Player to Game" button next to student's name.
- Student receives notification
- Student selects "reject game invitation" to reject the invitation.
- Teacher receives notification of rejection.

Scenario 3: Starting game against random opponent

Usage details

The following scenario describes the case when a user starts an *OnlineChess* match against a random opponent and the pre and post conditions needed to satisfy that requirement.

Pre-conditions

- The user of the system has an account
- The user of the system has a rank (default rank is 1200)
- The user of the system has selected a time range
- The user of the system has selected the random opponent game mode

Post-conditions

- The user of system has a game set against a random opponent with a similar rank
- A new game is logged under the user
- A new game is logged under the random opponent

Base Course of Action

- User Logs On to the OnlineChess system with their user account.
- User selects “Start Game vs Random Opponent”
- User’s system rank is retrieved from system.
- Random opponent is retrieved from the list of online users who have a similar system rank.
- Random opponent receives notification of game invitation.
- Random opponent selects “accept game invitation” to accept the invitation.
- User receives notification of acceptance.
- New game screen is displayed
- System randomly selects random opponent or user as white and black.
- White player is prompted for their first move.

Alternate Course of action

- User Logs On to the OnlineChess system with their user account.
- User selects “Start Game vs Random Opponent”
- User’s system rank is retrieved from system.
- Random opponent is retrieved from the list of online users and with a similar system rank.
- Random opponent receives notification of game invitation.
- Random opponent selects “reject game invitation” to reject the invitation.
- User receives notification of rejection.

Usage Scenario 4: Starting a game against a friend online

Usage Details

The following scenario describes a case when a user starts an *OnlineChess* game between a user and a friend opponent and the pre and post conditions needed to satisfy that requirement.

Pre-conditions

- The user of the system has an account
- The user of the system has registered the desired opponent as a friend
- The user of the system has selected a time range
- The user of the system has selected the friend game mode

Post-conditions

- A challenge request has been issued to the desired opponent of the user
- A game will show up in the game’s feed as unstarted

Base Course of Action

- User Logs On to the OnlineChess system with their user account.
- User selects “Start Game vs Friend”
- System displays list of friends currently online and available.
- User selects a friend to initiate game invitation.
- Friend receives notification of game invitation.
- Friend selects “accept game invitation” to accept the invitation.
- User receives notification of acceptance.
- New game screen is displayed
- System randomly selects friend or user as white and black.
- White player is prompted for their first move.

Alternate Course of action

- User Logs On to the OnlineChess system with their user account.
- User selects “Start Game vs Friend”
- System displays list of friends currently online and available.
- User selects a friend to initiate game invitation.
- Friend receives notification of game invitation.
- Friend selects “reject game invitation” to reject the invitation.
- User receives notification of rejection.

Usage Scenario 5: Playing a move

Usage Details

The following scenario describes a case when a user is currently in an *OnlineChess* game against an opponent (computer, friendly etc), and the pre and post conditions needed to satisfy that requirement. Playing a move is consistent across all matches and all opponents will correspond with this usage scenario.

Pre-conditions

- The user of the system is in a game
- The user of the system has turn priority
- The user of the system has the desired piece selected

Post-conditions

- The desired piece has been properly moved
- Any piece that would be captured by the recently moved piece is off the board
- The move is logged under the game’s moves

Base Course of Action

- The user drags the piece to the square it is to be moved to.

Alternate Course of action

- If the user attempts an invalid move, the piece is returned to its original position, and the user is notified that the move was invalid.

Usage Scenario 6: Saving an active game

Usage Details

The following scenario describes a case when a user is currently in an *OnlineChess* game against a computer opponent and wants to save current game progress. This usage scenario is only specific to this use case as a user cannot save a match between an friendly opponent. Pre and post conditions are listed below to satisfy the requirements for saving an active game.

Pre-conditions

- The user of the system is in a game
- The game type allows for saving

Post-conditions

- The game is saved under the user's game log
- The log of moves is pushed into the system's database

Base Course of Action

- While inside of the game of interest, the user clicks the "Save Game" button.
- The user is taken back to the homepage

Alternate Course of action

Usage Scenario 7: Match is declared over

Usage Details

The following scenario describes a case when a user's match in *OnlineChess* is declared over. This is valid for all opponents and the following pre and post conditions must be met in order to satisfy the requirement of declaring a match over.

Pre-conditions

- The user of the system or the opponent of the user has met the criteria to win the chess match

Post-conditions

- The game is saved under the user's game log as finished
- The user's rating is updated to reflect the game's outcome
- The opponent's rating is updated to reflect the game's outcome

Base Course of Action

- When the game ends a pop up states the winner and has a button saying "Home"

- The user clicks the button and is directed to the home screen

Alternate Course of action

Conclusion

Our team learned a wide variety skills on this *OnlineChess* second assignment. Given the sequencing of assignments back to back, the team as a whole operated more efficiently with our previously acquired technical documentation skills. From this, we developed a proficient work ethic by dividing up this assignment into sections. We formulaically dissected each usage scenario and built them in sequence. This as a whole gives the document a finished feeling and connectivity. Similar to the last assignment, our final document has undergone several rounds of comments. However, there were more conversations had between members in the comments, ultimately providing a better finished product. All in all, the building of skills from the last assignment is showing in our future work.