Software Engineering GP02 Project

User Interface Specification

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# Introduction

This document is our user interface design specification, created to guide our development of the program as well as be a visual reference from which we can all work from. In the chess tutor requirements, it states that the two main functions of this program are as follows.

1. To help users learn the valid moves in the game of chess, and to enforce those rules.

2. To allow to human players to use the game to play a game of chess.

## Purpose of this Document

The purpose of this document is to describe the main use cases of our program and give visual reference for each developer for the visual structure of the project.

## Scope

This document is for detailing the user specifications for this project by listing all of the needs of each type of user.

This document should be read by all project members and understood thoroughly by both the UI and systems programmers.

## Objectives

The objective of this document is to explain/list the typical users, list all the use cases and further detail how this will affect the development of the project. Finally, this document will go through all the error conditions to help avoid problems when it comes time to code the project.

# Typical users

## Beginner

The beginner will be new to chess, but not new to computers or Windows programs. The UI will need clear icons for each piece as well as the moves they can make, as this user may not know what can be done when selecting each from the board. There will also need to be a clear indication of which person is currently playing as well as which colour the user is.

## Expert

The expert will have a good understanding of chess and will not require much tutoring to get started with the program. However this player may have certain expectations when it comes to the UI, with things like drag and drop being expected when playing. It is also important to not clutter the UI for this type of user as they would become frustrated with hints that while helpful for beginners, would becoming irritating for a more experienced player.

# USe cases

## Beginner: Ref no. 01

### Shared use cases

UCB01 - Start new game.

User selects the ‘start new game’ button from the menu options. They will then be presented with an option to choose start colour (either white or black). For this use case, the game will notify the user that white plays first. The user then selects their chosen colour, and the game will assign their chosen colour to the user and the other colour to their opponent.

UCB02 - Select piece.

The user will select a piece when it is their go. The available options for the given piece that the user has selected, will be highlighted on the screen with dots in the centre of the available piece destination squares.

UCB03 - Move piece.

Described in UCB02, the user will select their chosen piece. To move the piece, they will simply have to select the destination square that they wish to move the piece to.

UCB04 - Remove piece from the board.

When a game is in progress and there is an option for the user to take their opponents piece, the square that their opponents piece is on will be highlighted as an available move. The user will take their opponents piece, and the removed piece will be shown off the board at the side of the screen, it will remain there for the rest of the game or until it is brought back into play with USB05.

UCB05 - Replace pawn with selected removed piece.

When a user pawn has successfully moved across the board, the pawn can be swapped for any one of their pieces that has been removed. When this happens, a box will appear on the screen with all the available pieces that can be substituted for the pawn along with a description of what the user must do. The user will select their chosen piece, and it will be displayed in the position that the pawn was at before.

UCB06 – Save game.

If the user wants to save the game they are currently playing, they will click the ‘Save Game’ button. A file explorer window will appear asking the user to select a location they wish to save the game in. They will then need to navigate to their desired location.

UCB07 - Load game

On the main menu, the user will select the ‘load game’ button. A file explorer window will appear, and the user will navigate to the folder that the game saves are stored in and select the save file they wish to load. The game will then display the selected chess game on the board in the state that it was saved in.

UCB08 - Replay game

When replaying a game, the user will first select the ‘replay game’ button. A file explorer window will appear, and the user will need to navigate to the folder that the game saves are stored in and select the save file they wish to load. The game will then have an option for the user to ‘step through’ the replayed games moves.

UCB09 – Quit

For any available ‘Quit’ button, the user will select the quit button, and a dialogue box will appear asking the user if they’re sure they want to quit. Clicking ‘yes’ will quit the game, clicking ‘no’ will close the dialogue box and return to the screen the user was previously on.

### Unique use cases

UCB10 - See all potential moves for selected piece.

As stated in UCB02, when the user selects a piece, the available moves will be highlighted on the screen, with dots in the centre of either the empty spaces, or the space containing an opposition piece that can be taken.

UCB11 - See previous move.

When either the user or opponent has made their moved, and it is their opponents move, the move that was previously made will be displayed by highlighting the two different cells. One cell will be the original location of the piece, and the other will be the cell where the piece was moved to.

UCB12 - See all removed pieces.

Removed pieces will be displayed at the side of the screen for the entirety of the game, unless one of the pieces is replacing a pawn, in which case that piece will be removed from the side of the screen and returned to the board, and the pawn that has been swapped will be moved to the side of the board.

UCB13 - Prompt castle swap move

## Expert: Ref no. 02

### Shared use cases

UCE01 - Start new game

User selects the ‘start new game’ button from the menu options. They will then be presented with an option to choose start colour (either white or black). The user then selects their chosen colour, and the game will assign their chosen colour to the user and the other colour to their opponent.

UCE02 - Select piece.

The user will select a piece when it is their go. The available options for the given piece that the user has selected, will be highlighted on the screen with dots in the centre of the available piece destination squares.

UCE03 - Move piece.

Described in UCB02, the user will select their chosen piece. To move the piece, they will simply have to select the destination square that they wish to move the piece to.

UCE04 - Remove piece from the board.

When a game is in progress and there is an option for the user to take their opponents piece, the square that their opponents piece is on will be highlighted as an available move. The user will take their opponents piece, and the removed piece will be shown off the board at the side of the screen, it will remain there for the rest of the game or until it is brought back into play with USB05.

UCE05 - Replace pawn with selected removed piece.

When a user pawn has successfully moved across the board, the pawn can be swapped for any one of their pieces that has been removed. When this happens, a box will appear on the screen with all the available pieces that can be substituted for the pawn along with a description of what the user must do. The user will select their chosen piece, and it will be displayed in the position that the pawn was at before.

UCE06 – Save game.

If the user wants to save the game they are currently playing, they will click the ‘Save Game’ button. A file explorer window will appear asking the user to select a location they wish to save the game in. They will then need to navigate to their desired location.

UCE07 - Load game

On the main menu, the user will select the ‘load game’ button. A file explorer window will appear, and the user will navigate to the folder that the game saves are stored in and select the save file they wish to load. The game will then display the selected chess game on the board in the state that it was saved in.

UCE08 - Replay game

When replaying a game, the user will first select the ‘replay game’ button. A file explorer window will appear, and the user will need to navigate to the folder that the game saves are stored in and select the save file they wish to load. The game will then have an option for the user to ‘step through’ the replayed games moves.

UCE09 – Quit

For any available ‘Quit’ button, the user will select the quit button, and a dialogue box will appear asking the user if they’re sure they want to quit. Clicking ‘yes’ will quit the game, clicking ‘no’ will close the dialogue box and return to the screen the user was previously on.

# Error conditions

## How the user interface look

(IMAGE)

## Potential use case errors

UCB01 - Start new game

UCB02 - Pick colour

UCB03 - Select piece

UCB04 - Move piece

UCB05 - Remove piece from the board

UCB06 - Replace pawn with selected removed piece

UCB07 - Load game

UCB08 - Replay game

UCB09 - Quit

UCB10 - See all potential moves for selected piece

UCB11 - See previous move

UCB12 - See all removed pieces

UCB13 - Prompt castle swap move

REFERENCES

[1] Software Engineering Group Projects: General Documentation Standards. C.W. Loftus. SE.QA.03. 2.5 Release

DOCUMENT HISTORY

| *Version* | *Issue No.* | *Date* | *Changes made to document* | *Changed by* |
| --- | --- | --- | --- | --- |
| 0.1 | N/A | 02-03-2023 | N/A - original version | TPR3 |
| 0.2 | N/A | 13-02-2023 | Added use case specifics | WIA14 |
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