Software Engineering Group Project

System Test Specification

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# Introduction

## Purpose of this Document

This document will be used as reference to system testing and specifies how we will test the system as a whole.

## Scope

This document’s tests are derived from requirements specification for the software group project [1].

The document’s standard and format are from the test procedure standards for the software group project [2]

## Objectives

The objective of this document is to guide the system tester during testing, so that they know what the system should be able to do and how it should behave when doing so.

# System Test Specification

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Ref** | **Req being tested** | **Test Content** | **Input** | **Output** | **Pass Criteria** |
| SE-F-001 | FR1 | Check that the user is prompted with a menu on startup | Opening or running the program | A menu is displayed on the screen | The menu is displayed correctly |
| SE-F-002 | FR1 | Check that menu contains an option to start a new game | Opening or running the program | One of the menu options is to start a new game | The menu option is present and works correctly |
| SE-F-003 | FR1 | Check that player 1 is able to enter their name | The player selects the menu option “start a new game” | There is a text box on the screen with the name prompt | The text box takes the user’s input and their input is used as their name |
| SE-F-004 | FR1 | Check that player 1 is able to choose their colour | The player selects the menu option “start a new game” | There are three buttons, one for white, one for black, and one for random | When one of the buttons is clicked an appropriate colour is assigned to player 1 |
| SE-F-005 | FR1 | Check that player 1 is able to specify whether they would like tutorials on or off | The player selects the menu option “start a new game” | There is a check box, this can be ticked to specify tutorials on or off | When the tick box is selected player 1 should have tutorials enabled, when deselected the tutorials should be disabled |
| SE-F-006 | FR1 | Check that player 1 is able to choose a colourblind setting | The player selects the menu option “start a new game” | There is a drop down list that has 4 options, for each type of colour blindness and no colour-blindness | Depending on the option chosen, the appropriate colours should be shown on the screen and in game |
| SE-F-007 | FR1 | Check that the button to proceed to the player 2 setup works correctly | The player selects the menu option “start a new game” | There is a button, named “next” | When the button is clicked player 1’s preferences should be stored and the player 2 setup screen should be displayed |
| SE-F-008 | FR1 | Check that player 2 is able to enter their name | Player 1 presses the “next” button | There is a text box on the screen with the name prompt | The text box takes the user’s input and their input is used as their name |
| SE-F-009 | FR1 | Check that player 2 is assigned the correct colour | Player 1 presses the “next” button | The program will specify what colour player 2 will be playing as | The colour specified should be the colour that player 1 isn’t playing as |
| SE-F-010 | FR1 | Check that player 2 is able to specify whether they would like tutorials on or off | Player 1 presses the “next” button” | There is a check box, this can be ticked to specify tutorials on or off | When the tick box is selected player 2 should have tutorials enabled, when deselected the tutorials should be disabled |
| SE-F-011 | FR1 | Check that player 2 is able to choose a colourblind setting | Player 1 presses the “next” button | There is a drop down list that has 4 options, for each type of colour blindness and no colour-blindness | Depending on the option chosen, the appropriate colours should be shown on the screen and in game |
| SE-F-012 | FR1 | Check that the back button works correctly | Player 1 presses the “next” button | There is a button labelled “back” | When pressed the button should go back to the player 1 setup screen |
| SE-F-013 | FR1 | Check that the button to start the game works correctly | Player 1 presses the “next” button | There is a button labelled “next” | When pressed the chess game should begin, with all parameters matching what was selected in the previous menus |
| SE-F-014 | FR1 | Check that the player has the option to restore a previous game on startup | Opening or running the program | One of the menu options is to restore a previous game | The menu option is present and when clicked takes them to a menu for previous games |
| SE-F-015 | FR2 | Check that the player names are tracked for the duration of the game | The player selects the menu option “start a new game” or makes a move in game | The player name is stored for the duration of the game | The name is stored in memory and can be corresponded to pieces |
| SE-F-016 | FR2 | Check that the player colour is tracked for the duration of the game | The player selects the menu option “start a new game” or makes a move in game | The colours of each player are stored for each of the players for the duration of the game | The colours are stored in memory corresponded to the correct players, and therefore the correct pieces |
| SE-F-017 | FR2 | Check that program is keeping track of where the players pieces are for the duration of the game | The player selects the menu option “start a new game” or makes a move in game | The pieces and their locations are stored for the duration of the game | The piece positions on the board are stored correctly in memory |
| SE-F-018 | FR3 | Check that program visually indicates which player should move | The player selects the menu option “start a new game” or makes a move in game | The program displays which player should move | The correct player is told to move |
| SE-F-019 | FR3 | Check that the players names are displayed on the screen | The player selects the menu option “start a new game” or makes a move in game | The program displays the player names | The names are displayed correctly |
| SE-F-020 | FR3 | Check that the board is displayed on the screen | The player selects the menu option “start a new game” or makes a move in game | The chess board should be displayed on the screen | The chess board is correctly displayed with no graphical errors |
| SE-F-021 | FR3 | Check that the pieces are displayed | The player selects the menu option “start a new game” or makes a move in game | The pieces should appear on the board | The pieces should be displayed in the correct locations, in the correct colour with no graphical errors |
| SE-F-022 | FR4 | Check if the player can only select their pieces | The player selects the menu option “start a new game” or makes a move in game | The player will be told if they try to move a piece that isn’t theirs | The correct player is prevented from moving the opponents pieces |
| SE-F-023 | FR4 | Check that the player can only move one piece at a time | The player selects the menu option “start a new game” or makes a move in game | The player will be told if they try to move more than one piece | Only one piece can be moved at a time |
| SE-F-024 | FR5 | Check that the possible legal moves are shown to the user | The player selects the menu option “start a new game” or makes a move in game | The program will show the legal moves for that turn to the user by colouring squares that can be moved to | The correct squares are coloured, and are the correct colour |
| SE-F-025 | FR5 | Check that the pieces can moved | The player attempts to move a piece | The piece selected will move | The correct piece moves to the correct location |
| SE-F-026 | FR5 | Check that the piece can only be moved if it is a valid move | The player attempts to move a piece | The player will be told if the piece cannot be moved | The program does not allow an illegal move |
| SE-F-027 | FR5 | Check that the player cannot move a piece to an invalid square | The player attempts to move a piece to an invalid square | The player will be told that it is an illegal move | The program does not allow a move to an illegal square |
| SE-F-028 | FR6 | Check that the program detects check and indicates it to the user | The opponent targets the king with one of their pieces | The player is told that they are in check by their king being highlighted in a colour | The program highlights the king in a colour (depending on which colourblind mode) |
| SE-F-029 | FR7 | Check that the program detects checkmate | The opponent puts the players king into checkmate | The player is told that they have lost | The program ends the chess game and stores the winner |
| SE-F-030 | FR8 | Check that program clearly indicates a game over | A condition that causes the game to end is triggered | The program tells the players that the game is over | The program displays a game over screen at the correct time |
| SE-F-031 | FR8 | Check that the program has an option to resign | The player selects the menu option “start a new game” or makes a move in game | There is a button somewhere that allows either player to resign | The player that resigns loses and the game is over |
| SE-F-032 | FR8 | Check that the players can make a draw | The player selects the menu option “start a new game” or makes a move in game | There is a button somewhere that allows either player to ask for a draw | Both players are presented with an option to draw and if accepted the game ends |
| SE-F-033 | FR8 | Check that the program saves the game as it ends | A condition that causes the game to end is triggered | n/a | The entire game and its details are saved to disk |
| SE-F-034 | FR9 | Check that the players can exit the game | The player selects the menu option “start a new game” or makes a move in game | There is a button somewhere that allows either player to quit the game | The game is adjourned and saved for later |
| SE-F-035 | FR9 | Check that the game is saved to disk each move | The player makes a move in game | The text file for the game should update with the current FEN string for the game | The correct game state is saved to the text file |
| SE-F-036 | FR10 | Check that the player can select a game to replay | The player selects the menu option “restore previous game” | The player is presented with a menu that has a list of games to replay | All the of the saved games are present and can be selected (highlighted) |
| SE-F-037 | FR10 | Check that the player can go back to the main menu | The player selects the menu option “restore previous game” | The current menu has a button labelled “cancel” | When the button is pressed it should take the user back to the main menu |
| SE-F-038 | FR10 | Check that the player can delete a game save file | The player selects the menu option “restore previous game” | The current menu has a button labelled “Erase” | When the button is pressed the save game that is highlighted is deleted |
| SE-F-039 | FR10 | Check that the player can load the selected game | The player selects the menu option “restore previous game” | The current menu has a button labelled “Load” | When the button is pressed the save game that is highlighted should be loaded into and be able to be replayed |
| SE-F-040 | FR10 | Check that the player has the option to review the game backwards | The player selects the menu option “restore previous game” | There is a button that allows the player to move backwards through the game | The board displays the previous move from the current game state |
| SE-F-041 | FR10 | Check that the previous move button cannot be pressed if there is no previous move | The player presses the “Load” button | The button should be greyed out | When the button is pressed it should not do anything |
| SE-F-042 | FR10 | Check that the player has the option to review the game forwards | The player selects the menu option “restore previous game” | There is a button that allows the player to move forwards through the game | The board displays the next move from the current game state |
| SE-F-043 | FR10 | Check that the next move button cannot be pressed if there is not another move | The player presses the “Load” button | The button should be greyed out | When the button is pressed it should not do anything |
| SE-F-044 | FR10 | Check the program allows the user to exit the replay mode | The player selects the menu option “restore previous game” | There is a button that allows the player to exit the replay mode | The button takes the user back to the start menu of the program |
| SE-F-045 | FR11 | Check the program saves each move made | The player makes a move in game | n/a | A file is updated with the new board position |
| SE-F-046 | FR11 | Check that the program can restore a game that has been quit | The player selects the menu option “restore previous game” | The is presented with an option to restore the game in question | When the game is selected it is in the correct (previous) state |
| SE-EI-001 | External Interface | Check that a user’s input is acted in on in under a second | Any input | The program responds within 1 second | The output is correct and took less than one second to display |
| SE-EI-002 | External Interface | Check that the program can run on the IS PCs | n/a | n/a | The program runs and behaves correctly on the IS PCs |

REFERENCES

[1] Software Engineering Group Projects – Chess Tutor Requirements Specification 1.1 (Release)

[2] Software Engineering Group Projects – Test Procedure Standards/2.1 (Release)

DOCUMENT HISTORY

| *Version* | *Issue No.* | *Date* | *Changes made to document* | *Changed by* |
| --- | --- | --- | --- | --- |
| 0.1 | N/A | 15/02/23 | N/A - original version | Jac127 |
| 0.2 | N/A | 22/02/23 | Added required sections and changed test reference numbers | Jac127 |
| 0.3 | #14 | 01/03/23 | Added more specific tests for some features | Jac127 |