Software Engineering GP02 Project

Testing Specification

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# Introduction

This document specifies testing information including system tests that the program will be tested against.

## Purpose of this Document

The purpose of this document is to ensure the program is robust and to detect bugs in the program that can be addressed and fixed. This document will also contain test reports.

## Scope

This document should be read by the system programmers and testers.

## Objectives

The objective of this document is to keep a record of system tests. This includes: test content, input, output and pass criteria, as well as reports on the tests that have been done.

# USE CASE TESTING

# TEST SPECIFICATIONS

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Test Ref | Req being tested | Test Content | Input | Output | Pass Criteria |
| **FR1 – Player Setup** | | | | | |
| SE-F1-001 | FR1 | Check that when the program starts the players are prompted to start a new game or restore a previous game | None | A prompt for what the user wants to do should be displayed | The game opens and prompts the user |
| SE-F1-002 | FR1 | Check that pressing ‘start a new game’ functions properly | Press start new game | Further prompts for information should be displayed | The game prompts the users for their names and who is playing the white/black pieces |
| SE-F1-003 | FR1 | Check that pressing restore previous game functions properly | Press restore previous game | Further prompts for information should be displayed | The players should be prompted to specify a saved game |
| SE-F1-004 | FR1 | Check that when prompted for user names, Giving a blank value is rejected | No value for first user prompt. Then rerun the test for the second user prompt | Error message warns of blank value, re-send name prompt | The value should be rejected and the code to prompt and assign the user name should re-run. |
| SE-F1-005 | FR1 | Check that when a player selects black, they are assigned black and the other player assigned white | Click black | *TBD based on future design* | The user that picked black should be assigned black and the other player assigned white |
| SE-F1-006 | FR1 | Dates too early are  rejected | Enter 1st January  1971. | Error message  warns of date  too early. List of  stored dates  should not have  been changed. | System  displays  "wrong date"  error  message. |
| **FR2 – Player Management** | | | | | |
| SE-F2-001 | FR2 | Check that the program will keep track of each player’s name and colour | Input ‘user\_black’ for one user, and ‘user\_white’ for the other.  Click black for user\_black | None | The program displays ‘user\_black’ with the black pieces, and ‘user\_white’ with the white pieces. |
| SE-F2-002 | FR2 | Check that the position of a piece is updated when it moves | Start fresh game. Move white pawn from D2 to D3.  Move black pawn from A7 to A6. Move white king from D1 to D2 | None | A display of the board in starting position, except A7 and D1 are empty. A black pawn in A6. A white pawn in D3. White king in D2. |
| SE-F2-003 | FR2 | Check that a black piece is removed when it is taken by a white piece | Start fresh game. Move white pawn from D2 to D3. Move black pawn from D7 to D5. Move white pawn from D3 to D4. Move black pawn from D5 to D4. | None | White pawn on D4 has been removed. Black pawn is on D4 |
| SE-F2-004 | FR2 | Check that a white piece is removed when it is taken by a black piece | Start fresh game. Move white pawn from D2 to D4. Move black pawn from D7 to D5. Move white pawn from D4 to D5. | None | Black pawn on D5 has been removed. White pawn is on D5 |
| **FR3 – Board Management** | | | | | |
| SE-F3-001 | FR3 | Check that when the game starts it is white’s turn | None |  |  |
| **FR4 – Piece Selection** | | | | | |
| SE-F4-001 | FR4 | Check that during white turn white pieces can be selected | Select any white piece during white’s turn | The program displays hints | The piece will be selected and the program will display hints |
| SE-F4-002 |  | Check that during white turn black pieces cannot be selected and moved | Try to select any black piece during white’s turn | None | The piece should not be selected |
| SE-F4-003 | FR4 | Check that during black turn black pieces can be selected | Select any black piece during black’s turn | The program displays hints | The piece will be selected and the program will display hints |
| SE-F4-004 |  | Check that during black turn white pieces cannot be selected and moved | Try to select any white piece during black’s turn | None | The piece should not be selected |
| SE-F4-005 | FR4 | Check that when it is white’s turn a white piece can be selected, then another white piece can be selected so long as the first piece is not moved | Select any white piece, then, without moving it, select another white piece | The program displays hints | The program displays hints for the first piece, then when the second piece is clicked the hints disappear, and hints for the second piece are displayed |
| SE-F4-006 | FR4 | Check that when it is black’s turn a black piece can be selected, then another black piece can be selected so long as the first piece is not moved | Select any black piece, then, without moving it, select another black piece | The program displays hints | The program displays hints for the first piece, then when the second piece is clicked the hints disappear, and hints for the second piece are displayed |
| **FR5 - Movement** | | | | | |
| **Pawn Movement** | | | | | |
| SE-F5-001 | FR5 | Check the pawn displays correct hints on its first move | Start a fresh game. Select pawn at C2 |  | Display hints that the pawn at C2 can be moved to C3 or C4 |
| SE-F5-002 | FR5 | Check the pawn can move one vacant place on its first move | Start a fresh game. Select pawn at C2 and move it to C3 |  | C3 is occupied by a pawn, C2 is empty |
| SE-F5-003 | FR5 | Check the pawn can move two vacant places on its first move | Start a fresh game. Select pawn at C2 and move it to C4 |  | C4 is occupied by a pawn, C2 is empty |
| SE-F5-004 | FR5 | Check the pawn displays correct hints on its second move | Start a fresh game. Move pawn from C2 to C3. Make any move on black side. Select pawn at C3. |  | Pawn is moved to C3. When clicked again display hints that the pawn at C3 can be moved to C4. |
| SE-F5-005 | FR5 | Check the pawn can not move three vacant places on its first move | Start a fresh game. Select pawn at C2 and attempt to move it to C5 |  | Pawn is not moved |
| SE-F5-006 | FR5 | Check the pawn can move one vacant place when it is not its first move | Start a fresh game. Select pawn at C2 and move it to C3. Make any move on black side. Select pawn at C3 and move it to C4. |  | C4 is occupied by a pawn, C2 is empty |
| SE-F5-007 | FR5 | Check the pawn can not move two vacant places when it is not its first move | Start a fresh game. Select pawn at C2 and move it to C3. Make any move on black side. Select pawn at C3 and attempt to move it to C5. |  | C3 is occupied by a pawn, C2 is empty. Pawn is not moved from C3 to C5. |
| SE-F5-008 | FR5 | Check the pawn cannot move three vacant places when it is not its first move | Start a fresh game. Select pawn at C2 and move it to C3. Make any move on black side. Select pawn at C3 and attempt to move it to C6. |  | C3 is occupied by a pawn, C2 is empty. Pawn is not moved from C3 to C6. |
| **Bishop Movement** | | | | | |
| SE-F5-101 | FR5 | Check the Bishop displays the correct moves at the start of the game | Start a Fresh game, Select the Dark Squared bishop |  | Should not display any possible moves at all as the bishop is blocked |
| SE-F5-102 | FR5 | Check The Bishop can correctly display it’s available spaces which it can move to | Start a Fresh game, Select the pawn at B2 and move it to B3, After black’s move select the Bishop |  | Should display that it is able to move to B2 & C3 |
| SE-F5-103 | FR5 | Check The Bishop can move one vacant square on it’s color | Start a Fresh game, Select the pawn at B2 and move it to B3, After black’s turn (G7 to G6) Move the Dark Squared bishop to B2 |  | The Dark Squared Bishop should Occupy the B2 square and the C1 square should be empty |
| SE-F5-104 | FR5 | Check if the bishop correctly displays it’s available moves on which it captures another piece | Continue from last test, After black’s turn (H7 to H5) Select the Bishop |  | It should Display that it can Capture the Rook on H8 |
| SE-F5-105 | FR5 | Check The Bishop can move it’s full range on its own color | Continue From Last Test, after black’s turn Move the Bishop from B2 to E5 |  | The Dark Squared Bishop Should Occupy E5 and B2 should be empty |
| SE-F5-106 | FR5 | Check if the bishop correctly displays it’s available moves on which it captures other pieces | Continue from last test, After black’s turn (H5 to H4) Select the Bishop |  | It should Display that it can Capture the Rook on H8 and the Pawn on C7 |
| SE-F5-107 | FR5 | Check if the bishop can capture opposing the opposing players pieces | Continue from last test, Select The Dark Squared Bishop and Capture the pawn on C7 |  | The Dark Squared Bishop Occupies the C7 Square and pawn is no longer on the board |

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 | 05/02/2023 | N/A - original version | MIB60 |
| 0.2 | N/A | 12/02/2023 | Added more tests, added headers for each functional requirement and sub-headers for FR5 | MIB60 |
| 0.25 | N/A | 13/02/2023 | Removed Some Tests that were no Longer Required, Added Tests for the Bishop, Changed Test Ref names to make it more readable | ABD15 |
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