Software Engineering Cowards – SPRINT 3 DELIVERABLE

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https://github.com/RedSoxFan/2174\_CS1530\_SoftwareEngineeringCowards

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SPRINT 3 ACCOMPLISHMENTS

As with past sprints, we have been communicating mostly in class discussions and with a group text message where the scrum master facilitates who will on what task for a particular sprint. There were not really any disagreements this sprint, but we did encounter some design changes in the middle of it that involved changing the format of save files from object files to simple text files. This is because it would be easy to check the validity of the files and to be able to look at the text file and easily know if the information is correct based on the game you have played thus far. Other major accomplishments were finally implementing the many capture rules of the game and allowing a game to be won or lost. Besides just the rules for basic capture we have included things that will be of benefit in the future, such as keeping track of how many moves have occurred without a capture and checking that the king squares cannot be accessed by other pieces. We have many tests for these rules that automatically move the pieces and ensure that the appropriate capture did or did not happen. These tests were fairly simple to implement because we have methods in our Board class that allow us to directly move pieces on the board, and we don’t have to actually rely on a user interacting with the game to test it. The tests for the king squares were not very complex since we have structures that allow us to easily check the king’s location on the board and also have the location of the special squares marked. We tested the saving functionality by creating a base text file, and having the test replicate the moves that were used to make the test file. The test then compares both text files to ensure that they are the same and the format is consistent. Overall there is a lot of progress being made with the game and we should soon be able to consider the main game itself completed and start adding more interesting functionality to it.

USER STORIES COMPLETED

**Story Points: 8**

As a player

I want to be able to save and load my Hnefatafl games

So that I can take a break in the middle of a game to resume later

**Story Points: 8**

As a player

I want the attackers to win if there is an attacker's piece on all four adjacent sides of the king

So that the Copenhagen rules are obeyed

**Story Points: 8**

As a player

I want the king and his defender's side to win if the king occupies any of the four corners

So that the Copenhagen rules are obeyed

**Story Points: 4**

As a player

I want the game to end in a draw if there is 50 consecutive moves without a capture

So that the Copenhagen rules are obeyed

**Story Points: 4**

As a player

I want a side to win if the opposing side moves a piece back and forth three times

So that the Copenhagen rules are obeyed

**Story Points: 8**

As a player

I want any piece other than the king to be captured if there is an opposing piece and/or hostile square on each side of that piece along a column or row

So that the Copenhagen rules are obeyed

**Story Points: 4**

As a player

I want the throne to always be hostile to attackers

So that the Copenhagen rules are obeyed

**Story Points: 4**

As a player

I want the four corners to be hostile to any piece

So that the Copenhagen rules are obeyed

**TOTAL VELOCITY: 48**

USER STORY DECISIONS

We decided to complete these user stories based on current requirements for the sprint. We were tasked to focus first on completing checking moves are legal, allowing players to lose/win, and special squares being visually distinct. We already handled legal moves and special squares being distinct in the last sprint. Since we had these finished we had time to focus on other user stories. This includes checking for draws and determining if a side loses by moving a piece back and forth three times in a row. We have been working quickly, so we decided to split stories and accomplish extra during the past two sprints. This is why we decided to implement save/load functionality as well. It seemed like the next logical step and may be due for the next sprint, so we will already have it done.

DEFECTS FOUND

**ID:** 1

**Title:** King Capture Failure

**Description:** When the king is captured it remains on the board.

**Reproduction Steps:** Execute the following commands:

> git clone https://github.com/RedSoxFan/2174\_CS1530\_SoftwareEngineeringCowards/

> cd 2174\_CS1530\_SoftwareEngineeringCowards

> git checkout 2447996251a58f53544c38428fe8ee1f86c5034f

> gradle build

> gradle run

> Move pieces until king is surrounded by attackers

**Expected Results:** Attackers win, the game is over, and the king is removed from the board

**Observed Results:** Attackers win, the game is over, but the king is still on the board

**Resolution:** Add code to update the state of the king’s square from KING to EMPTY.

**ID:** 2

**Title:** Save Game Failure

**Description:** A game can still be saved after the game is over.

**Reproduction Steps:** Execute the following commands:

> git clone https://github.com/RedSoxFan/2174\_CS1530\_SoftwareEngineeringCowards/

> cd 2174\_CS1530\_SoftwareEngineeringCowards

> git checkout 2447996251a58f53544c38428fe8ee1f86c5034f

> gradle build

> gradle run

> Move pieces until game is over

> Save game

**Expected Results:** User notified they cannot save a game once it is over.

**Observed Results:** Save game feature works when a game is over.

**Resolution:** Added code so user is notified “Cannot save a board in a game over state.”