

# Software Engineering Group Project - Design Specification

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Config Ref: Design-Spec-GP9

Date: 3 March 2023

Version: 0.2

Status: Draft

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# 1. INTRODUCTION

Clear, consistently followed, document standards are essential in software engineering.

## 1.1 Purpose of this document

The purpose of this document is to educate on the design of our system. This includes the relationships between components and classes in our system and how they achieve the functional requirements set out in the project brief.

## 1.2 Scope

This document contains the details of all our classes, the relationships between, and how they come together to form a program that achieves the goals of the functional requirements. This document should be read by all project members. It is recommended that the reader is familiar with the UI specification[1]

## 1.3 Objectives

The objective of the document is to inform about how the program works by detailing the functionalities and relationships of the classes.

## 2. DECOMPOSITION DESCRIPTION

Some text.

### 2.1 Programs In System

Our system is designed with only one program. The system contains classes that handle the logic of the game and control the graphics display. The logic is handled by Java object classes and the graphics are handled by JavaFX classes alongside CSS stylesheets.

### 2.2 Significant Classes In Each Program

There are many significant classes in our system. Here they are listed in no particular order.

#### 2.2.1 Board Class

Some text.

#### 2.2.2 Piece Class

Some text.

#### 2.2.3 Interface

This class contains main and the stage for the programs screen. The program is run from this class. This class contains functions to switch the screen between different screens and pass information back and forth between the backend and frontend.

#### 2.2.4 PlayScreen

This JavaFX class contains the Screen for the players to interact with the chessboard. It visually displays the turn of the player and provides options for quitting, resigning, offering surrender, and stepping through the history of the game.

#### 2.2.5 LoadScreen

This JavaFX class contains the Screen for the players to choose a save. It displays a selection of games finished, or unfinished, and passes to the PlayScreen if a particular game is selected.

#### 2.2.6 Chessboard

This JavaFX class contains the logic for graphically representing the state of the board. For example, it will visually highlight valid locations for a pressed piece to move.

### 2.3 Mapping From Requirements To Classes

| Requirement | Classes  |
|-------------|--|
| FR1         | Interface, StartScreen, PlayerNameScreen, PlayScreen |
| FR2         | PlayScreen   |
| FR3         | Chessboard   |
| FR4         | Chessboard   |
| FR5         | Chessboard   |
| FR6         | Chessboard   |
| FR7         | PlayScreen   |
| FR8         | PlayScreen   |
| FR9         | PlayScreen   |
| FR10        | StartScreen, LoadScreen, PlayScreen, Chessboard      |
| FR11        | StartScreen, LoadScreen, PlayScreen, Chessboard      |

## 3. DEPENDENCY DESCRIPTION

Some text.

### 3.1 Component Diagrams

Good luck.

## 4. INTERFACE DESCRIPTION

Some text.

### 4.1 Interface Interface Specification

- Type: Public
- Extends: Application
  - This is because it contains the main function
- Public Methods:
  - start(Stage stage)
  - main(String[] args)
  - click(int column, int row):Notifies backend of the position selected by the

user.

- toMenu():Sets the stage's primary screen to be the menu screen.
- toPNScreen():Sets the stage's primary screen to the player name screen.
- toChessboard()
- toNewChessboard(String whiteName, String blackName)
- loadFGames()
- loadUFGames()

## 4.2 LoadScreen Interface Specification

- Type: Public
- Extends: Nothing
- Public Methods:
  - LoadScreen(Interface anInterface): Constructor. Constructs Screen.
  - populateSaveBar()
  - Scene getScene()
  - setSaveType()

## 4.3 PlayerNameScreen Interface Specification

- Type: Public
- Extends: Nothing
- Public Methods:
  - PlayerNameScreen(Interface anInterface)
  - Scene getScene()

## 4.4 PlayScreen Interface Specification

- Type: Public
- Extends: Nothing
- Public Methods:
  - PlayScreen(Interface anInterface)
  - chessBoard()
  - setWhitePlayerName(String name)
  - setBlackPlayerName(String name)
  - updateBoard(String boardNotation)
  - Scene getScene

## 4.5 StartScreen Interface Specification

- Type: Public
- Extends: Nothing
- Public Methods:
  - StartScreen()
  - getStartScreen()

## 4.6 ChessBoard Interface Specification

- Type: Not Done
- Extends: Not much at the moments
- Public Methods: TBD

## REFERENCES

- [1] QA Document SE.QA.01 - Quality Assurance Plan
- [2] QA Document SE.QA.02 - General Documentation Standards

## DOCUMENT HISTORY

| Version | Issue No. | Date     | Changes made to document   | Changed by |
|---------|-----------|----------|--|------------|
| 0.1     |           | 13/02/23 | Document created.  | TYW1       |
| 0.2     |           | 08/03/23 | Introduction written, four classes added to decomposition description, mapping classes to requirements added, and interface descriptions begun | GWH18      |