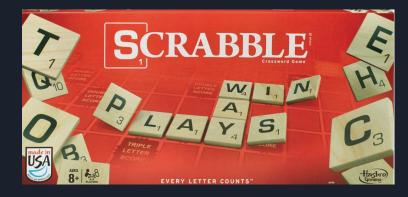


Overview of Scrabble



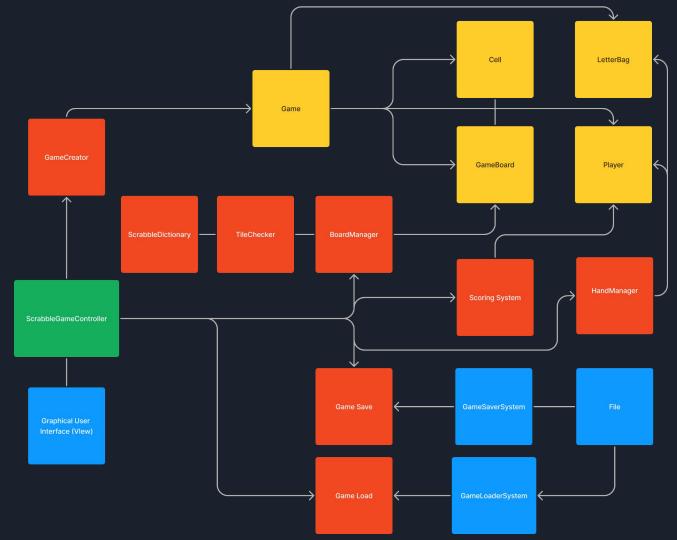
Domain: Gaming Platform

Specification: Scrabble game imitation involving 2 players, data persistence, Java Swing UI, a score calculator, and validity checkers.

Scrabble is a skill-based board game traditionally played using wooden pieces that involves creating words. The longer the word and the more complex the word, the more points players achieve.

Repo: https://github.com/CSC207-2022F-UofT/course-project-scrabble

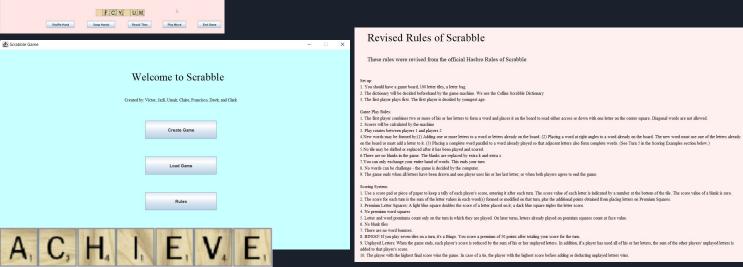
Clean Architecture Dependency Chart



Graphical User Interface

Play Scrabble

- UI consists of pages with interactions
- Each scrabble tile is represented by a button
- Know where each button is and which coordinate they relate to.



Create a new Game Player 1 Name: Player 1 Player 2 Name: Start Game

Graphical User Interface

Biggest challenge: coordinate for where tiles would be clicked while following Clean Architecture

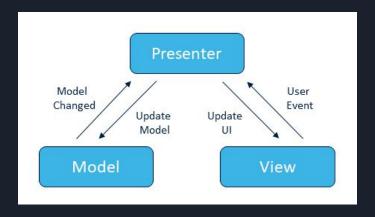


ScrabbleGameController

- Works as an intermediary to activate the usecases.
- Sits in the controller layer of clean architecture
- Follows MVP architecture

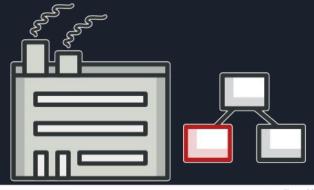


Challenge



Use Cases: Create Game

- User inputs names for Player 1 and Player 2
- Then presses "Start Game"
- Initializes a brand new game state
- Design Pattern: Factory Method
- Within use case layer of Clean Architecture





Use Game and Load Game



Use Cases: Place Tile, Place Word, Reset Move

Function:

Place Tile - Verify location of tile placed on the board.

Place Word - Verify word placed on the board in dictionary.

Reset Move - Reset moves made by the player on the board.



Demonstration: Place Tile & Place Word

Use Cases: Place Tile, Place Word, Reset Move

Design:

- Use Case layer of Clean Architecture

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Demonstration: Reset Move

Use Cases: Tile Checker (Francisco)

Design Pattern

- Tile Checker is part of the Use Case layer of clean architecture..

Problem faced

- Corner cases:
 - Tiles on the edge of the board
 - Multiple words formed

Solution



Use Cases: Scrabble Dictionary and Tile Checker (Claire)

Draw Tile Feature

- Triggered at end of turn
- Fills Player's hand from bag
- Within use case layer of Clean Architecture



Design Ideas

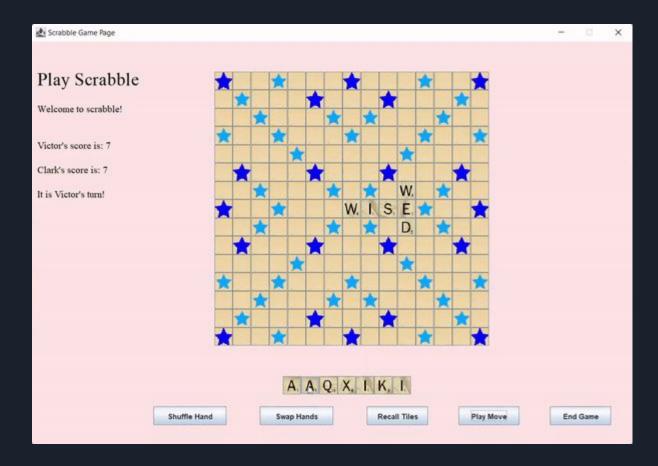
Design Pattern: SOLID:

- Mediator
- ReduceDependencies
- Single role to draw tiles
- Interfaces separated
- Not dependant on other classes



Scoring System

- Triggered after valid move is played
- Scores move depending on positioning on board
- Within use case layer of Clean Architecture



Design Ideas

Design Pattern

- Visitor
- Separate algorithm from object operated on
- Easier to adapt

SOLID

- Sole purpose to score valid moves
- Interfaces adequately split
- No dependency on other classes







Challenge Faced

Problem

 Discrete bugs within Draw Tile from inadequate testing

Solution

- Increased unhappy flow testing from milestone 4
- Resolved many errors throughout the program with better testing





Future Work



AI
2+ players
Online/Web Based
Tournament

