GameCentre - Phase 2 | CSC207 |

Nizar Islah, Abhi Kapoor, Sultan Sidhu, Shahzil Lakhani, Fatima Paak

Group 0647

Features

- User authentication and account creation
    - Ability to log in/create new account (with added security)
    - Ability to recover forgotten password
- Scoreboard: Global and Local
    - View score of most recent game for the winning user
    - switch between global top scores and user top scores per game.
- Implementation of 2 new games
    - Hasami Shogi: Japanese board game similar to checkers, various sizes, undo, autosave, local multiplayer
    - Connect4: various board sizes possible, autosave, local multiplayer

Scoreboard Implementation

Our implementation of Scoreboard follows a hard-to-break, easily-extensible design

- Very elegant design
- Custom user class
    - Contains HashMap mapping Game to List of Top 3 Highest Scores
    - User objects instantiated upon creation of a new user; stored on HashMap
    - 3 Algorithms to calculate score; invoked automatically upon winning a game
    - Highest score replaced if user beats the highest score

Excellent Software Architecture

Effective Use of Design Patterns

MVC

- Clearly defined Model and View classes (Activities and File Saving/Modifying classes), logic decoupled and managed by controllers

FACTORY

- Used for instantiating ScoreCalc classes (ScoreFactory)
- Used for instantiating BoardManagers (BoardManagerFactory)

STRATEGY

- Strategy Design Pattern for Calculation of score algorithm and class

Excellent Software Architecture

Effective Usage of Interfaces:

    BoardManagers → HSBoardManager, C4BoardManager, SlidingBoardManagr

- Usage of Object oriented design principles (SOLID)
- Open for expansion of new board games with little code duplication
- More abstract object types are used whenever possible
- Efficient refactoring of code and reduction of duplicate code through inheritance in activity classes
- File and User Managers handle saving the user's data after each move

Our best unit test class

ShogiBoardManager

- A class responsible for managing the board for Hasami Shogi

- 100% code coverage and accuracy in testing
- Testing of a variety of difficult situations

What we're proud of

- MovementController
    - Very concise, hard-to-break, and easy-to-follow code
- Connect4 BoardManager and Shogi BoardManager
    - Optimized code
    - Excellent runtime
- GUI: Login Page, Scoreboard and Leaderboard
    - With with software, we also took into account the emotion and user experience conveyed to the user
    - Graphics/Design and portrayal of our app as user-friendly
- Our Team!
    - Excellent collaboration
    - Excellent team work in debugging and refactoring code