



CS 319 Object-Oriented Software Engineering

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Final Report Iteration 1

My Little Quadrillion - Group 1C

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1. Introduction: State of the Implementation

For the implementation of “My Little Quadrillion”, the work is distributed among the group members and the following progress was achieved. All the scenes of the game are designed and have basic functionalities. Arcade Game Scene is also designed and have several levels that are ready to play. Game pieces can be dragged and dropped and snapped to available board places. game piece can be rotated and flipped around its vertical axis. The sound capability is implemented and volume can be adjusted from the settings menu. The database, that will be used to store users’ information and progress, is going to be implemented in the following weeks. The User Interface should be improved in terms of visuals and made more user friendly since so far we, as developers were more concerned more on the functionality rather than how it looks.

2. Design changes

In our project “My Little Quadrillion” had various design features in different levels or pages in the game. Initially, it was planned to store user data in a in a text file. Instead, we have chosen it to implement using relational database. This way we can store data more efficiently and in more organized way. Furthermore, the access will be more structured codewise, since it is more natural to express object oriented data in relational database data format than simple text fields. Additionally those fields become more susceptible for corruption when this data is on user’s machine.

My Little Quadrillion has different twelve pieces which have unique colors to distinguish them. Also, colors are important part of the usability of the game. Initially, during the analysis we did not realize how critical colors are in our game and can be determining factor for some individuals with any sort of color blindness. That is why, we add a new feature as a Color-blind mode for players who is suffering from color-blindness in daily life.

For adding new viewpoint of the game, there is a shifting of the shape of the pieces which are putting on the game 4x4 board grid. Because in digital platform of the game is played like 2D view from the top to make the sight more appealing. Therefore, redundant spaces between pieces are removed owing to angular pieces.

3. Lessons Learnt

Throughout the course of the first iteration the purpose of each activity became clearer. The documents that were produced as a result of these activities helped greatly when the implementation was started. For example, for many game scenes we used our mock up screens. Subsystem decomposition also helps us visualize how internal game bits communicate with each other. Additionally, the classes defined in design stage saved us time when we actually started writing the functionality.

From technical knowledge perspective, we learned git version control system and some of its commands such as init, add, commit, log, show. Since we use GitHub as a platform for our projects in CS 319, we also learned commands associated with remote version control such as push and pull. All of this opened a new perspective on software development. We learned fundamentals of Java FX and are still in the process of learning for the purposes of our game.

We also gained a lot of experience in terms of working in the groups and coordinate each other to achieve a common goal. Sometimes, one person can not agree with himself but in the groups you have to make sure that 5-6 people agree on the point to proceed with the project. Therefore everyone improved in terms of compromising for the greater good.

4. User's Guide

4.1. System requirements & installation

- A device that runs Java Runtime Environment.
- ~100 MB of free storage space
- 256 MB of volatile memory

If Java Runtime Environment is not installed on the system, the user can install it from official Java download page: <https://www.java.com/tr/download>

The game does not require installation process. Executable file is obtained from the source code that can be run by double clicking on the file.

4.2. How to Play

GOAL The purpose of the game is to fill up the board with provided pieces.

DRAG To drag a piece hover your mouse over it and left click and drag the mouse without releasing the left button until the piece is over the intended position.

ROTATE To rotate the piece click the mouse right button while dragging the piece.

FLIP To flip the piece symmetrically over its vertical axis keep rotating, the piece will flip in at most 4 rotations depending on the geometry of the piece.

PLACE To place a piece on the board, release the left button of the mouse over the intended position. If the closest place on the board is available on the game board, the piece will snap on the board and change color saturation to visually confirm that the piece is placed.