Bilkent University

Department of Computer Engineering

**CS 319 Term Project**

*Section 1*

*Group 1A*

*Walls and Warriors*

**Final Report**

Project Group Members

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# 1. Introduction

Implementation of the project started after the first iteration of design report. We used the class diagram that we came up in the design stage, and it was useful for us to do the work share to declare who implements what exactly. Dawood started with the database in order to get and import the scores, Salih took the graphical user interface part. Deniz implemented the entity class of GamePiece which was composed of Knight and Wall classes. GamePiece and Knight classes were more straightforward while the Wall class had more complications. Meanwhile Mert implemented GameTimer which is a part of LevelEngine. He also implemented the LevelEngine which includes algorithms that incorporate with [GamePiece]s. Mert and Deniz cooperated during implementation of the logic of the game board. Faruk on the other hand had to wait for GUI and LevelEngine to be completed so that he could merge the project and implement the GameController class. Therefore Faruk and Salih had to fix the GUI that Salih implemented. Currently, the GUI of the project does not work correctly and it is not finished yet. However, we implemented just one level of the game but there are some problems with the GUI. We can also place the walls to proper locations by mouse dragging. If the location is not proper, meaning that it corresponds to a tile that a tower or a knight are to be placed, the wall goes back to the original place and does not let the user to put it in the wrong place. We cannot rotate the walls yet as well. Algorithms of Mert and Deniz are yet to be tested and applied after the completion of a healthy GUI.

# 2. Design Changes

There were some design changes in the final implementation. The design report assumed that every class can be implemented with ease however it did not turn out to be that easy. We did our design with respect to the class diagram we did in the design report iteration 1. There has been some changes in entity class such that Walls do not have number of rotations anymore. For now, the menus are not implemented yet because we think the core game is more significant to be implemented first. We do not think about changing design of the menus for the final iteration. Also we are currently considering we can switch from javaFX to java swing because we might feel more comfortable with it since every member had used it in CS 102.

**3. Lessons Learned**

GameController class was the hardest to implement and Faruk had many troubles because of possible errors and missing parts in other classes. We saw that GameController class is very hard to be implemented with incomplete code in other classes. Also critical errors show up during the merge stage of the report. Thus, some core changes are needed to be made. Moreover we learned that GUI should not be implemented by one person because there are always extreme cases and also design issues that are needed to be a product of a consensus. In our case, our mistake was the missing discussion about GUI, not the design. In essence, we all had ideas and we put them down in the design report and reached a decision. However, we realized that some of them are very complicated to implement before the core project is done. Regarding this fact, the most complicated step for us to take was implementing the Sandbox Mode in which the user plays around in an editor mode and creates one’s own levels. In this iteration, we did not implement the Sandbox feature.

**4. User’s Guide**

**4.1 System Requirements & Installation**

Walls & Warriors does not have any special software or system requirements. All one needs is to download the .jar file on their consoles and he/she will be able to play the game.

**4.2 User Manual**

1. Download the JAR (.jar) file.
2. Open the file.
3. Click on *Play Game*.
4. Play the game.