

PROJECT PHASE 4: FINAL REPORT

Game

Description

This is a 2D game set in the world of the Lord of the Rings. It follows Frodo upon his task to destroy the One Ring. This is a perilous journey wherein Frodo travels through Mordor to reach Mount Doom to destroy the ring and defeat the Dark Lord Sauron. Along his journey, Frodo must collect bread, water, and weapons to stay alive and he may run into Gandalf the Grey and Samwise Gamgee for extra help. There will be obstacles along the way such as lava, spider webs, and the Eye of Sauron that will deteriorate Frodo's health if he walks into them. There will also be several enemies trying to kill Frodo and reclaim the One Ring; avoiding them will be essential.

Changes since Phase 1

In terms of game mechanics and logic such as the reward, enemy, and punishment point system, we have remained faithful to our phase 1 design. However, most of our deviations from phase 1 stem from the UML design and changes to improve the player's gameplay experience.

For example, one drastic change we made was increasing the number of punishment cells while also decreasing the number of enemies. Originally, we had too many enemies on the board which made the game too hard. Thus, we eliminated it down to four moving enemies and increased the amount of punishment cells such as lava and spider webs.

The final product varies, in that the implementation of the entire game loosely follows the updated UML diagram and not the UML diagram from phase 1. We also added minor additions such as music, alternate bonus reward spawn times, and the number of enemies and punishment cells listed above.

Lessons learned

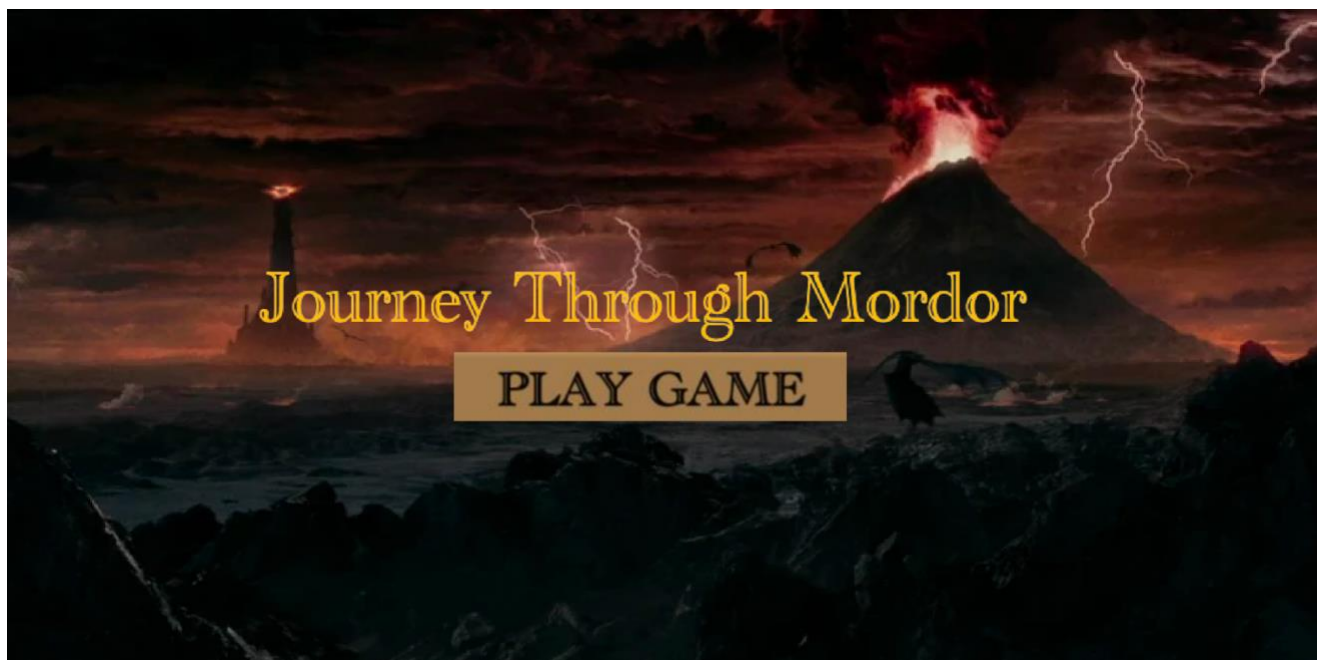
Throughout the course of the project, we learned a lot of lessons as a team. First, we gained more experience and insight into the importance of object-oriented programming principles. Prior to this experience, we were all briefly introduced to object-oriented programming principles in the past, but had not actually implemented them. Throughout this project, we were able to implement object-oriented principles and observe the benefits it has on the quality and efficiency of the software development process. As a team, we also learned about design principles and the importance of a good initial design. This was evident through our initial UML diagrams, which were inadequate and difficult to translate into code. As such, we spent more time redesigning the UML diagram, time which we could have spent on developing the game.

Tutorial

This section will briefly show a step-by-step walk through of the game. To see the game in action, please watch this video we created: [Tutorial Video](#)

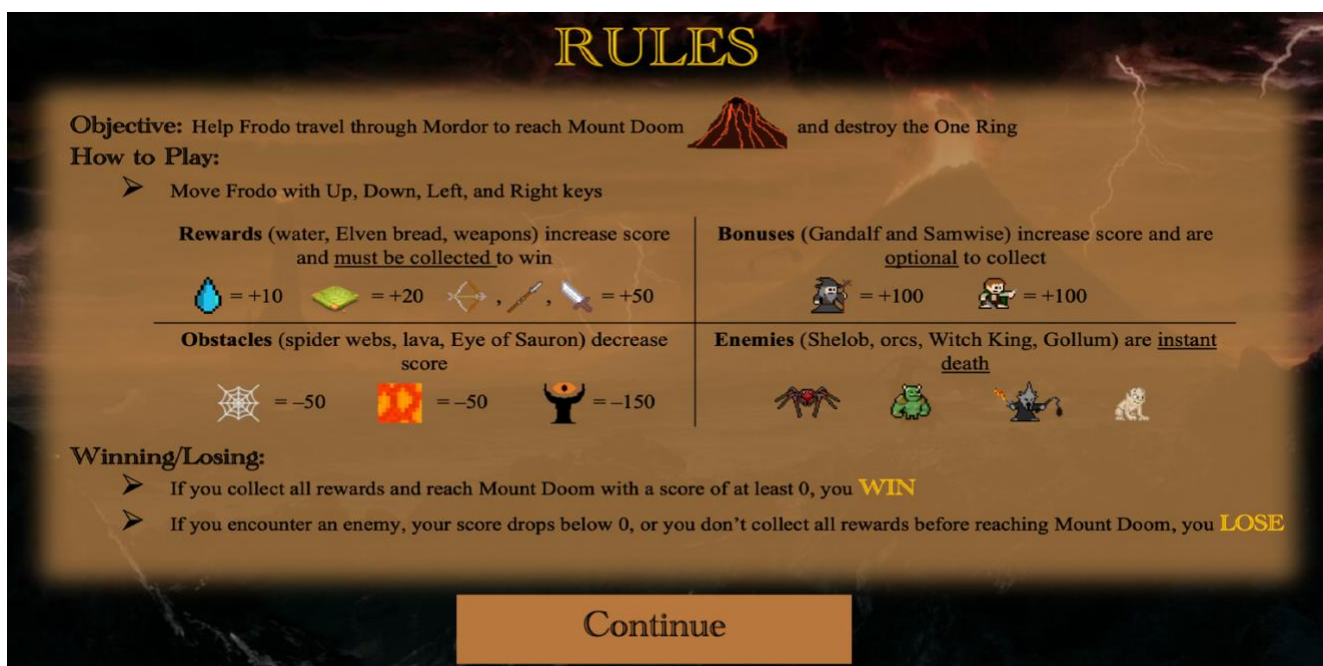
Title screen

When you run the game, you will be presented with the game's title screen. Click "PLAY GAME" to continue.



Rules screen

Next, you will be shown the rules of the game. Pay attention to the images for each of the icons in the game, so you know what to collect and what to avoid. Click "CONTINUE" to start playing.



Game screen

Now you're in the game. Your score and time elapsed are displayed at the bottom of the screen. You are controlling Frodo (shown in the top left corner) and you must collect all water, bread, and weapons and reach Mount Doom (shown in the bottom right corner) to win. If you are hit by a moving enemy or your score is negative (from walking into lava, spider webs, or the Eye of Sauron), you will lose. Keep an eye out for Gandalf and Samwise, they are your friends and will give you bonus points if you find them, but they won't stick around for long.



End of game screen

Finally, if you reached Mount Doom successfully, you will have won and will be presented with the following screen. If you lost, your screen will be slightly different. Click "PLAY AGAIN" to jump back into the game and start over.

