

Word Count: 580

Individual Report

Overview:

Throughout the whole project, our team maintained great communication and productivity. As soon as one member was available to work on the project, they updated the group chat to ensure that no one else would work on the same section, preventing conflicts in the codebase. We also used a TODO file to assign and track remaining tasks, as well as a 'thoughts' text file to document ideas for improvements, questions about the code, and future tasks. Our primary means of communication was a WhatsApp group chat, where we frequently discussed progress, shared updates, and scheduled meetings as necessary.

My Contributions:

I played a key role in developing the game by implementing the primary requirements, including:

- Drawing a paddle at the bottom of the screen so that the player can move left and right with the left/right arrow keys and setting its initial position and speed.
- Drawing a wall of bricks at the top of the screen in a grid structural format
- Drawing a moving ball that bounces off the top of the screen, left of the screen, right of the screen, the paddle, and the bricks (removing the brick as the ball hits it) and setting its initial size and speed.
- I designed a scoring mechanism. I created a box at the top of the screen to display the users score and number of lives. The score changes based on the number of bricks and type of bricks hit.
- I added a level 2 as well to the game with a completely different design which had moving bricks.
- I added multi hit bricks. Red bricks required 3 hit bricks and gave 3 points similarly green bricks were 2 required 2 hits and gave 2 points and yellow bricks were single hit bricks giving 1 point.
- Making the leaderboard persistent, so that high scores would be saved even after closing the program and top 5 would be displayed.

- For the group report, I wrote the overview, team working and evaluation and conclusion section. I also made the reference uml and flowchart diagrams using draw.io.

In addition to these features, I actively participated in debugging and improving the game logic. Collision detection was one of the more difficult challenges I faced, but with the help of my teammate (240010314), we worked together to fix the system and ensure that the ball bounced correctly off the paddle and bricks.

Challenges Faced:

- One of the biggest challenges I encountered was handling collision detection properly. The initial implementation had issues where the ball would not bounce correctly, leading to unintended behaviour in the game. Fixing this required multiple iterations and testing, but in the end, we successfully refined the system.
- A lot of my code was repetitive and messy which with the help of my teammate (240010314) was then later sorted into different classes to improve

Teamwork and Final Thoughts

I am proud of what we accomplished. Our clear communication, structured workflow, and organized task management allowed us to develop a functional and enjoyable Breakout game. We managed to meet all primary and secondary requirements, and tertiary requirements which was a big accomplishment for our team. This project reinforced my skills in game development, debugging, and implementing core game mechanics, and I am satisfied with the end result.