CMPUT 355 Assignment 4

Mahmood Falmaz

1 Group Name

Quadtris

2 Members

Mahmood Falmaz [1518066], Zubier Hagi [1557453]

3 Project Contributions

Mahmood Contributions: Researched implementation of main menu, and user functionalities, music and other user interfaces.

Zubier Contributions: Researched various methods of implementation of the tetris game, the different shapes, rotations, boundaries and overall functionalities of the tetris game.

4 References and Repository

Following references have been documented in the source code. Currently two references have been used. *https://en.wikipedia.org/wiki/Tetris*

1) To understand the various different shapes
2) Check the validation of the tetris piece being placed in the players specified spot.

The public github repository can be found here: *https://github.com/MahmoodFalmaz/Tetris355*

Other resources we used: *https://www.nicepng.com/ourpic/u2e6a9w7r5u2u2t4_arrow-keys/*, *https://www.slashgear.com/tetris-effect-pc-release-slated-for-next-week-as-epic-games-store-exclusive-16583994*

5 Game Description

Tetris is a single player tile-matching game that was released in 1984. The purpose of tetris it to prevent various different shapes from stacking up to the top of the screen/board. By placing various different-shaped blocks in a way where no empty space consists between them, which allows the users to obtain points and the continuation of the game.

6 Project Accomplishments

Our initial goal was to implement a 2 player Hex game on a 6*6 Y-shaped board. However, we have shifted our focus to tetris to establish a unique game that is visually appealing with pygame. The most satisfying part was the ability to have the game running and working. We did have a few difficulties as the game would crash either from the beginning or midway. The most disappointing part was when team members decided midway that they will no longer be able to commit to this assignment. For future iterations, i would love to have the game be implemented in 2 player method, where 1 player tries to limit the amount of stacked blocks while the other plays objectives is to stack as many as they could. I believe that this would make it more competitive as it would allow users to think thoroughly of each piece that they place.

7 Project Performance

The tetris implemented is a tutor game, to allow players to get familiar with the layout/functionality of the game. The feedback received was to have either music implemented and have some sort of clear instructions on how to play the game. One feedback that we did

develop on is to allow the player to understand the next shape that will be displayed to allow the player to decide on what their best move should be.

8 Total Outcome

The overall outcome of the project came out well as it is both visually and musically matching to the game. We believe that it is user friendly and easy to use since the learning curve isn't too steep and the functionalities are quite easy to understand. Furthermore, the game pace is quite normal and the beginning stages of the game allows the user to make a few mistakes without any consequences. Thus far, we have spent about 20+ hours learning/brainstorming and developing our tetris game.

9 Diary

My contribution to the project consisted of doing research and the setting up of the game. We decided on tetris as our project as we deemed it was a game that most people are familiar with and the functionalities were easy to explore with different types of algorithms. The first step of this project was, to have a working prototype of tetris using pygame and introduce new functionalities through each iteration.

- Phase 1: (Monday October 26,2020) ~ 4 hours
    - Brainstorming/Discussing various different possible games to implement and what we would learn. Discussion on Hex, Go, Tic Tac Toe and Tetris.
    - Upon analysis (Complexity/ Run Time, Language and Tools) of each game we concluded that Hex would not be an ideal project to construct as it wouldn't be unique as the professor has provided us with the implementation of Hex during the term. Therefore, we have finalized in doing Tetris.
- Phase 2: (Monday November 2,2020) ~ 2 hours
    - Discussed the various research we have done. (Algorithm, Methodologies, Etc.)
    - We had split the tasks up at this point. (Pygame,GitHub, Basic Source Code for game layout to be established).
- Phase 3: (Week of Nov 9,2020) ~ 10-12 hours
    - Implemented and finished the main menu and other user functionalities this includes: background image, user instructions, pressing buttons, and starting/quitting the game.
    - Implemented and finished the game music and other user functionalities this includes: background music, mute/unmute functionalities, pause/resume functionalities, and the game logo.
- Phase 4: (Week of Nov 16,2020) ~ 4 hours
    - Discussed what we have accomplished, pair programming and general structure of the code.
    - Improved the quality of the code, to make it more user friendly and fixed any occurring errors
    - Improved the overall structure of the code, and simplified the code as much as I could to make it more effective, and easier to read for developers