

CS 242 Final Project Proposal
Java Tetris
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1. Abstract

1.1. Project Purpose

The purpose of this project is to get more experience in game development with high-level languages; this lack of experience is a problem for me in getting into a future job of game development.

1.2. Background/Motivation

I am interested in applying what I learned through Java chess to other simplistic 2-dimensional video games.

2. Technical Specifications

2.1. Platform: Java Application

2.2. Programming Languages: Java 8

2.3. Stylistic Conventions: Code Conventions for the Java Programming Language

2.4. SDK: Java SE Development Kit 8

2.5. IDE: Eclipse

2.6. Tools/Interfaces: Swing (Java)

2.7. Target Audience: Gamers

3. Functional Specifications

3.1. Features

Several bullet points of what kind of functionality your project will feature. What should the user be able to do?

3.1.1. Play a full Tetris Game on a GUI

3.1.2. Save/Load Tetris Games

3.1.3. Pause Tetris Games

3.2. Scope of project

What are some of the limitations of this product?

3.2.1. Cannot create a standalone application to play on (needs to be played on Eclipse)

4. Timeline:

4.1. Week 1

4.1.1. Implement logic for the board shape/size, movement/rotation of Tetris pieces, lines being eliminated, and losing the game.

- 4.1.2. Implementing all types of Tetris pieces (L-block, line piece, square block, etc.)
- 4.1.3. Use of data structures and OOP.
- 4.1.4. Unit testing for all of the above

4.2. Week 2

- 4.2.1. Do any code refactoring or bug fixes from the weeks before.
- 4.2.2. Implement two functions. One randomizes which piece is chosen to be dropped into the board. The other is a time function which updates the board (all falling pieces move down by one square, the dormant pieces on the bottom of the board stay still, or the fact that there is a full line is discovered)
- 4.2.3. Implement V of the MVC GUI
- 4.2.4. Manual Test Plan for MVC GUI

4.3. Week 3

- 4.3.1. Do any code refactoring or bug fixes from the weeks before.
- 4.3.2. Implement main game loop
- 4.3.3. Implement M and C of the MVC GUI
- 4.3.4. Manual Test Plan for MVC GUI

4.4. Week 4

- 4.4.1. Do any code refactoring or bug fixes from the weeks before.
- 4.4.2. Implement pause button
- 4.4.3. Implement saving and loading the game through a txt file
- 4.4.4. Implement the pause button and save/load feature into the MVC GUI.
- 4.4.5. Manual Test Plan for MVC GUI.

5. Future Enhancements

I would like to add the game functionality in which the game speeds up after a few piece drops. Also, after finishing CS 440 this semester, I could add Minimax AI to play the game. I might also try to add Tetris pieces with interesting behaviors.