

Approach B requirements (generated by ChatGPT with human input)

Functional Requirements

1. The system must initialize the game board and set up the initial game state when the application starts to prepare the game environment.
2. The system must generate and display random Tetromino shapes (I, O, T, S, Z, J, L) at the top of the game board for gameplay variability.
3. The system must allow the user to move the falling Tetromino left, right, and down using keyboard inputs to enable gameplay interaction.
4. The system must allow the user to rotate the falling Tetromino 90 degrees clockwise with a keyboard input for arranging pieces.
5. The system must detect and clear complete lines when they are formed, with the remaining pieces above falling down to fill the cleared space, enabling scoring and progression.
6. The system must increase the falling speed of Tetrominoes as the game progresses to add challenge.
7. The system must display the player's current score and level on the game screen to provide feedback on performance.

Non-Functional Requirements

8. The system should respond to user inputs within 100 milliseconds for a smooth gameplay experience.
9. The system should maintain a frame rate of at least 30 frames per second to ensure visual comfort and smooth operation.
10. The system should use no more than 100 MB of memory during gameplay on a standard modern CPU to ensure efficient performance across various hardware configurations.