World of Tetris: Fragments of the Sleepless Realm

2. Core Gameplay Loop

The core gameplay loop of World of Tetris is built upon the classical Tetris structure: a continuous sequence of falling tetrominoes placed within a confined playfield. Each action is constrained by time, space, and future uncertainty, creating a high-density decision environment.

Unlike many modern reinterpretations, the project deliberately avoids altering the fundamental rules of Tetris. Instead, it enriches the decision-making context through layered systems that interact with, but never replace, the base mechanics.

2.1 Canonical Loop Steps

1   A tetromino spawns at the top of the playfield.

2   The player manipulates the tetromino using movement and rotation.

3   The tetromino descends under gravity and player input.

4   Upon collision, a lock delay window allows final adjustments.

5   The tetromino locks into the board.

6   Completed lines are cleared.

7   Score, level, pressure, and progression systems are updated.

8   The next tetromino becomes active.

2.2 Modern Mandatory Mechanics

World of Tetris implements the full set of mechanics expected from modern competitive Tetris implementations. These mechanics are not optional features, but foundational requirements that define the game's responsiveness and fairness.

Hold System: Allows the player to temporarily store one tetromino. Hold can be used once per drop cycle, enforcing strategic timing.

Next Preview: Displays the upcoming tetromino, enabling forward planning and risk mitigation.

Ghost Piece: Projects the landing position of the active tetromino, reducing ambiguity and execution errors.

Soft Drop: Accelerates descent while maintaining player control. Used for fine positioning.

Hard Drop: Instantly locks the tetromino at its lowest valid position, rewarding decisiveness.

Lock Delay: A short grace period after ground contact allowing micro-adjustments before locking.

2.3 Design Intent

Each mechanic exists to support player agency under pressure. The loop is tuned to minimize frustration while maximizing responsibility: success and failure are always traceable to player decisions.

Importantly, no hero ability, pet effect, or antagonist intervention bypasses this loop. All higher-level systems operate by influencing conditions within the loop, never by overriding it.

Educational Notes

This gameplay loop serves as an ideal teaching example for finite state machines, real-time input handling, deterministic simulation, and layered system design. Students are encouraged to study how each additional system hooks into the loop without altering its structure.