

ASE 420 Team Project

Error 404: Name Not Found

Week 7 Progress Report – Tetris



Week 7: Oct 27 – Nov 2



Focus: Pause/Resume UX, Score Display & Session High Score

Team Overview




Team Members

- Jeffrey Perdue – Team Leader
- Anna Dinius – Scoring & UI
- Cody King – Preview, Pause/Resume
- Owen Newberry – Rendering & Controls




Sprint 2 Progress: Continuing feature buildout (advanced scoring, preview integration, pause UX)

Week 7 Goals Summary





Anna's Goals

-  Expand unit tests to cover multipliers and edge cases
-  Display current score in the UI and persist until reset
-  Display session high score in-game

Cody's Goals

-  Integrate Next Piece preview with piece generation
-  Add pause state management to the game loop
-  Modify input handling for pause/resume (ESC, click-to-resume)

Owen's Goals

-  Integrate level progression with line clearing
-  Calculate landing position for ghost piece
-  Implement ghost piece collision detection logic
-  Write unit tests for ghost piece calculation

Statistics Overview

Lines of Code Added

- Anna: 153 LoC total
 - `app.py` : 6
 - `src/constants.py` : 1
 - `src/game/game.py` : 10
 - `src/game/score.py` : 2
 - `src/utils/session_manager.py` : 29 (new)
 - `src/view/pygame_renderer.py` : 8
 - Tests: `tests/test_scoring.py` : 96,
`tests/test_score_utils.py` : 1

- **Cody:** 74 LoC total

- `app.py` : 8
- `src/game/game.py` : 12
- `src/view/input.py` : 8
- `src/view/pygame_renderer.py` : 46

- Owen: 77 LoC total
 - `app.py` : 3
 - `src/game/board.py` : 46
 - `src/view/pygame_renderer.py` : 28

Total: 304 lines of code

Burn Down & Velocity

- **Anna**

- Week 7 milestones: 3/3 (100%)
- Early Week 8 milestones: 2/3 completed
- Sub-requirements completed (Sprint 2): 8/14 (~57%)

- **Cody**

- Week 7 goals: 3/3 (100%)
- Sprint 2 milestone completion (per Cody report): 6/12 (~50%)

- **Owen**
 - Week 7 goals: 3/3 (100%)
 - Sprint 2 milestone completion: 7/14 (50%)

Major Technical Achievements

Session High Score & Score Display (Anna)

- Session-wide `SessionManager` for `high_score` persistence
- Renderer `draw_score(...)` to place Score/High Score relative to board
- Tightened `points_for_clear` input validation (`TypeError` on invalid types)

Pause/Resume UX & Preview Integration (Cody)

- `Game` gains `paused` state; gravity and inputs gated when paused
- `ESC` maps to `PAUSE` ; click emits `CLICK` to resume
- `draw_pause_screen()` overlay in renderer
- Next Piece preview centered via 4x4 bounding box of piece

Level Progression Integration & Ghost Piece System (Owen)

- Level progression wired to line clearing
- Ghost piece landing calculation
- Ghost piece visualization

Key Architecture Changes

1) Session Manager (New)

```
# src/utils/session_manager.py - 29 LoC (new)
class SessionManager:
    high_score: int = 0

    def update_high_score(self, score: int) -> None:
        if score > self.high_score:
            self.high_score = score
```

- Centralized session state
- Simple API to atomically update high score

2) Renderer Score Panel

```
# src/view/pygame_renderer.py - updated
def draw_score(self, board_x: int, board_y: int, score: int, high_score: int) -> None:
    # Renders labels and values positioned relative to board origin
    ...
```

- Board-relative layout for stable positioning across screen sizes

3) Game Pause State

```
# src/game/game.py - updated
class Game:
    def __init__(self, ...):
        self.paused = False

    def apply(self, intent):
        if intent == PAUSE:
            self.paused = not self.paused
        if self.paused and intent != PAUSE:
            return
```

- Input/updates respect pause; gameplay fully freezes until resume

4) Pause Overlay & Preview Centering

```
# src/view/pygame_renderer.py - updated
def draw_pause_screen(self) -> None:
    # Semi-transparent overlay + centered "PAUSED" label
    ...

def draw_next_piece(self, piece) -> None:
    # Center piece in preview rect using 4x4 bounding box
    ...
```

- Consistent preview visuals; clear paused feedback

Testing Coverage Highlights

- Anna expanded tests for scoring, validation, and edge cases
- Integration checks for session high score updates
- Cody verified Pause/Resume UX manually; preview centering validated in runs

Week 7 vs Sprint 2 Planning

- **Anna – Ahead of plan:** Completed Week 7 and part of Week 8 work
- **Cody – On plan:** Completed Week 7 goals including Pause/Resume and preview integration
- **Owen - On plan:** Completed Week 7 goals with Ghost Piece and Level Progression functionalities
- **Team:** Strong momentum toward full Sprint 2 completion

Week 8 Focus (Looking Ahead)

- Anna: Finalize remaining scoring UI polish, high score persistence refinements
- Cody: Broaden pause UX polish, expand automated tests
- Owen: Difficulty levels, ghost piece logic
- Maintain test coverage and UI consistency

Week 7 Takeaways

Priority: Advanced features shipped with solid UX

Outcome: Score/High Score displays, Pause/Resume, preview centering

Next: Polish, testing depth, and remaining Sprint 2 items