Angelo State
Dominic Ramirez
**Senior Design Project Spring '25**

Proposal
Feb 24, 2025

Project Description

The "2D Game a Week Challenge in Java" is a self project to develop one small 2D game each week using Java. The purpose of this challenge is to rapidly improve programming skills, game development expertise, and problem-solving abilities. Each game will be developed using Java with libraries such as JavaFX or LibGDX, focusing on different mechanics and design patterns. By the end of the challenge, a portfolio of completed games will be available, demonstrating versatility and efficiency in game development.
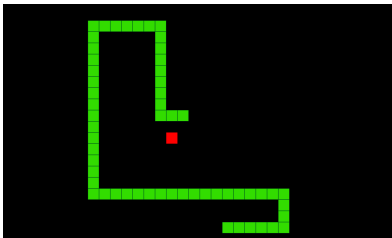
REQUIREMENTS

1. **Programming Language & Tools:**
   - Java (JDK 11 or later)
   - Integrated Development Environment (IDE) such as IntelliJ IDEA or Eclipse
   - Game libraries such as JavaFX or LibGDX
   - GitHub for version control
2. **Game Development Aspects:**
   - Sprite rendering and animation
   - User input handling
   - Basic physics and collision detection
   - Sound and music integration
   - Simple AI behavior (optional, depending on the game type)
3. **Deliverables:**
   - One completed 2D game per week

- ○ Source code repository for each game
- ○ Documentation including a short game design document
- ○ A blog post or summary outlining the development process and lessons learned

METHODS

1. **Game Selection & Ideation:**
   - ○ Each week, a new game idea will be selected based on a predefined theme or a random inspiration.
   - ○ A simple game design document (GDD) will be created to outline the core mechanics, controls, and objectives.
2. **Development Process:**
   - ○ Day 1: Game concept finalization, GDD preparation, and setting up the project.
   - ○ Days 2-3: Implementing core mechanics, rendering, and player controls.
   - ○ Day 4: Adding game logic, UI, and visual polish.
   - ○ Day 5: Implementing sound effects, background music, and testing.
   - ○ Day 6: Bug fixing, optimizations, and final adjustments.
   - ○ Day 7: Final testing, publishing, and writing a post-mortem.
3. **Project Management:**
   - ○ Trello or Notion will be used for tracking progress.
   - ○ GitHub will be used for version control and sharing projects.
   - ○ A blog or GitHub Pages will be used for documentation and reflections.

PROJECT TIMELINE

The challenge will last for **8 weeks**, depending on availability and scope. Each week follows the same structured schedule as outlined in the Methods section.

Week	Game Theme/Concept	Technologies Used	Completion Status
1	PacMan	Java	Pending
2	Snake	Java	Pending
3	FlappyBird	Java	Pending
…	…	…	…

REFERENCES

- "Killer Game Programming in Java" by Andrew Davison
- JavaFX and LibGDX official documentation
- Online game development tutorials and forums, will link officials when finished