Week 5 Sprint Report: Finalizing Gameplay Mechanics and AI Integration

5.1. Project Overview

5.1.1. Sprint Details

Sprint Number: 5

Duration: 04/03/2024 – 11/03/2024

5.1.2.Objective

Our goal for the closing sprint was to finalize the game's core mechanics. This included integrating advanced AI logic, refining attack and spell card scoring systems, and conducting comprehensive testing to ensure the gameplay experience is both polished and engaging.

5.2. Achievements

5.2.1. Break down of what we completed

Chang Le - AI Integration -Successfully integrated advanced AI logic, enabling dynamic and challenging encounters. This crucial development harmonizes AI behaviour with the game's strategic elements, allowing AI opponents to make intelligent, context-based decisions.

Weifan - AI Spell Card Scoring - Developed an innovative scoring system for AI to effectively evaluate and utilize spell cards. This system enables AI to strategically assess the potential impact of using spell cards in various gameplay scenarios, optimizing their tactical use.

Saranya Lakshmi - Logic Fixes and Testing - Addressed and resolved critical issues with move and attack logic, ensuring that units act as intended during gameplay. Extensive testing of creature and spell card interactions was conducted to verify their functionality and balance, significantly contributing to the refinement of the game's mechanics.

Luochen - Attack Scoring - Refined the attack scoring system, enhancing the strategic depth of AI behaviour. This refinement allows for a more nuanced assessment of attack moves, promoting tactical gameplay and AI decision-making.

Sruthi - Testing and Sprint Report - Led the final phase of testing with meticulous attention to detail, verifying all game components to identify any issues. The comprehensive sprint report was compiled, highlighting the team's progress, achievements, and insights, marking the project's successful conclusion.

5.2.2. Closing Achievements

- **Comprehensive Integration**: Achieved seamless integration of AI logic with game mechanics, ensuring a balanced and engaging gameplay experience.

- **Issue Resolution**: Successfully resolved all identified issues, ensuring the game operates smoothly and according to design expectations.

- **Extensive Testing**: Conducted exhaustive testing rounds, affirming the game's stability, performance, and overall quality, marking readiness for launch.

5.2.3. Carried Over Tasks

- With this being the closing sprint, all critical tasks were completed, marking the successful conclusion of the project development phase.

5.3. User Stories

AI Strategy	P29-P31

5.4. Challenges and Next Steps

5.4.1. Challenges and solutions

Integration Complexity

- **Challenge**: Integrating complex AI logic within the game's systems posed challenges in ensuring seamless and engaging AI behaviour.
- **Solution**: A collaborative approach, featuring extensive debugging and strategy discussions, facilitated the refinement of AI behaviours to align effectively with game dynamics.

AI Spell Card Scoring Precision

- **Challenge**: Creating an accurate scoring system for AI's strategic use of spell cards proved difficult, aiming to enhance AI versatility.
- **Solution**: Iterative development, augmented by game analytics and player feedback, improved scoring algorithms, simulating a more human-like AI decision-making process.

Logic Issue Resolution

- **Challenge**: Persistent move and attack logic issues resulted in units behaving incorrectly, affecting gameplay consistency.
- **Solution**: Systematic bug tracking and targeted unit tests enabled precise identification and resolution of game logic inaccuracies, ensuring correct behaviour across game elements.

Attack Scoring Enhancement

- **Challenge**: The need to add strategic depth to AI's attack decisions without making the AI overpowering or predictable.
- **Solution**: A weighted scoring system that analysed multiple game state variables was implemented, offering a balanced enhancement to AI's tactical planning.

Comprehensive Testing

- **Challenge**: Leading a thorough testing phase to identify any lingering issues was crucial for meeting quality standards before launch.
- **Solution**: Combining automated tests with focused playtesting sessions ensured exhaustive coverage of all game aspects, facilitating the identification and fixing of minor issues for optimal game stability and performance.

5.4.2. Next Steps and Planning

- **Reflection and Learning**: Conduct a comprehensive project retrospective to glean insights, lessons learned, and best practices for future projects.

5.5. Closing Reflections

This final sprint represented the culmination of our team's hard work, creativity, and collaboration. Through persistent effort and adaptive problem-solving, we have transformed our vision into a playable, engaging game.