**ICS3U FSE Weekly Log #2**

**Date:** January 9, 2025  
**Game:** *Space Invaders*

This week, I focused on several key aspects of the game to improve gameplay and overall balance. A significant update was made to the shields they now weaken visually as they take hits from enemy bullets. I made a health system for the shields that tracks their durability, causing them to disappear completely after a certain number of hits.

I also addressed issues with enemy shooting. Enemy bullets were adjusted to shoot less frequently at the beginning of the game, but their firing rate now increases as the player progresses through levels. This provides a smoother difficulty curve and keeps the game challenging as time goes on.

**Challenges Encountered:**One challenge this week was designing a shield weakening system that felt both natural and visually intuitive. At the start, I created this effect by animating the shield using different pre-designed images for various damage states. However, this approach felt rigid and lacked a dynamic, organic appearance. To address this, I implemented a system where black "damage patches" are randomly generated on the shield sprite each time it gets hit. This method not only looks more natural but also effectively communicates the progressive damage of the shields during gameplay. The randomization adds variety, ensuring the shields appear uniquely damaged in every playthrough.

**Accomplishments:**

* shield weakening and destruction mechanics.
* Adjusted enemy firing rates to scale with difficulty.
* Enhanced player shooting mechanics using a cooldown system

**Plans for Next Week:**

* Add a game-over screen to display the final score and allow restarting.
* Add effects for shield damage and explosions for enemies and the player.
* Implement a leaderboard to track player names and scores, with game history.
* Introduce themes with different backgrounds and spaceship designs.
* Test and debug all updates to ensure smooth gameplay.

