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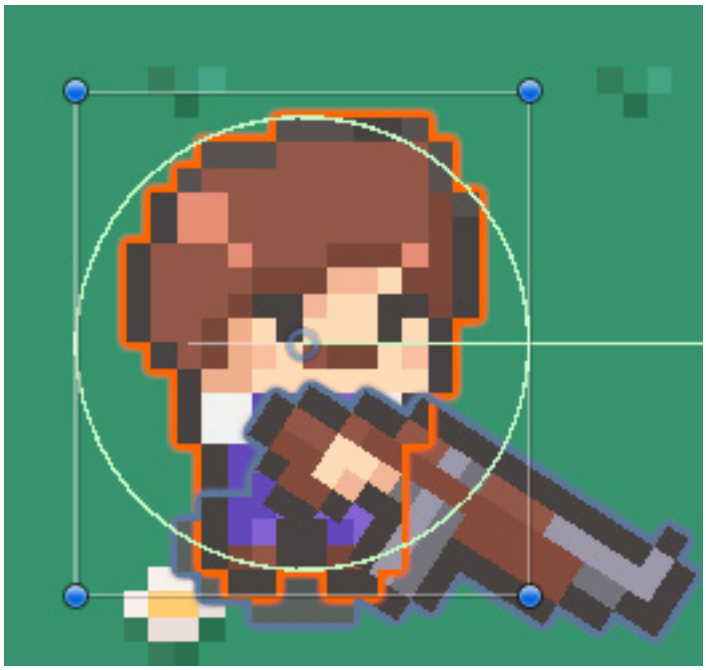
Cover Letter For Estoty Survivor's Test

Introduction

I hope this letter finds you well. In here, I'll share my brief journey through the Estoty Survivor's Test, highlighting the aspects of the game that I'm particularly proud of and the achievements I've made. I'll also touch on some of the challenges I encountered and offer thoughts on areas where I believe the game could be improved.

1. Actor Player

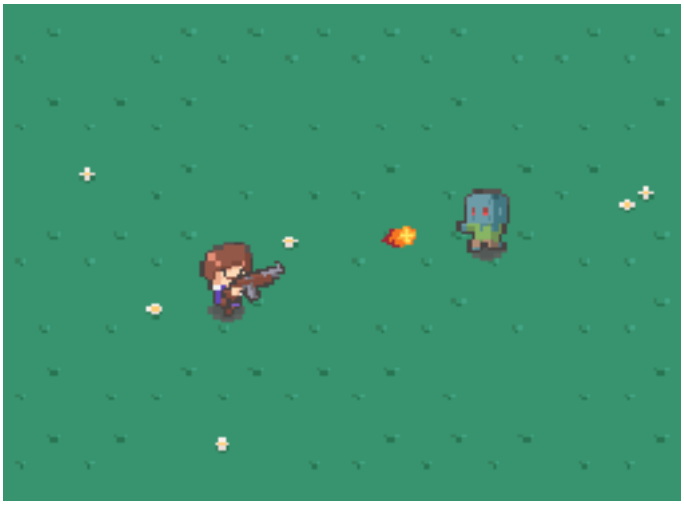
Let's address the hefty ActorPlayer class. I put a lot of thought into how the player should aim and move, opting for a "Terraria"-style approach where the weapon rotates independently of the body. I also implemented rigid body movement to provide physical feedback when the player is hit. I'm proud that the ActorPlayer not only responds to player input but also tracks enemies and even runs backwards when he is shooting back.



However, this added functionality made it tricky to fully adhere to SOLID principles. To manage all these responsibilities, I had to use several controllers, which resulted in a larger and more complex class than I would have preferred.

2. Actor Enemy

No game is complete without its enemies. Unlike the player, enemy actors didn't need sophisticated flip animations, which simplified their implementation. I used serialized objects to define unique stats for each enemy type and developed an EnemySystem with VContainer. This system provides comprehensive control over enemy behavior, including spawning, targeting the player, managing spawn rates, and limiting the number of enemies per level. Additionally, the system uses enemy rarity, making tougher enemies less frequent. Competent players can quickly face a high number of enemies aswell, creating a thrilling and intense challenge.

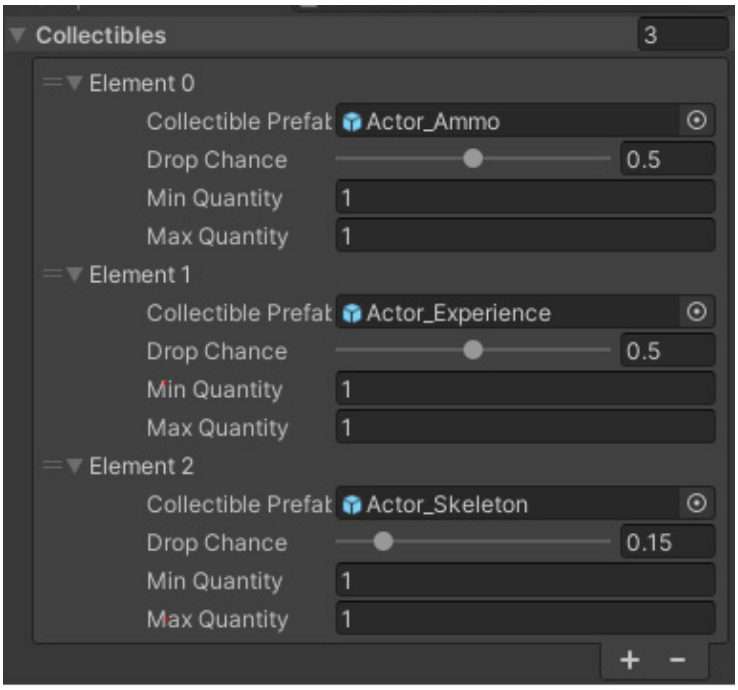


3. LevelSystem

For me, the most compelling part of this project is probably the LevelSystem. It's responsible for applying random upgrades to the player and coordinating with the EnemySystem to adjust difficulty. A key component is the LevelSystemSettings and IPlayerUpgrade interface combined with scriptable objects.

By implementing the IPlayerUpgrade interface with scriptable objects, I created a flexible system where upgrades can be added without modifying the core player class. For instance, the Upgrade-FireRate scriptable object demonstrates this approach by allowing dynamic modifications to player attributes like fire rate through the Apply method. This setup adheres to SOLID principles, particularly the Open/Closed Principle, as new upgrades can be introduced without altering existing code, thus enhancing the system's scalability and maintainability.

4. CollectibleSystem



This is probably the most fun system in the game because of its randomness and chaotic potential. It's responsible for spawning collectible items after an enemy is defeated. The system uses CollectibleTableData scriptable objects, which function as loot tables attached to enemy prefabs. These tables define which items can spawn, their rarity, and their frequency.

What's really exciting is that items don't have to be traditional collectibles. They can be any gameObject, such as an enemy prefab. This allows for hilarious scenarios where, after defeating an enemy, you might suddenly find yourself surrounded by a wave of new enemies.

5. Possible Improvements and thoughts

Before I wrap up, I'd like to mention a few improvements I would have make.

Firstly, I would implement a system for an infinite background, which wasn't part of the original requirements but this would be good since at the moment it is possible to reach the edge of the game. I also wanted to include audio, but I didn't have time to do so. Additionally, I would create a more refined finish screen using additive scene loading, but since it wasn't specified in the tasks, I opted for a simple game-over screen in order to save time.

Overall, I'm really happy with what I've accomplished. I enjoyed thinking outside the box for various features and hope you will find my work valuable. I'd be thrilled about the chance to work with your team in the future!

Kind regards,
Your surviving farmer,
Rokas