

Technical Task Jaider Zapata

Introduction

This document outlines the development process, architectural decisions, and a personal assessment of the prototype. The project features a 2D Top-Down world utilizing Pixel Art aesthetics, focusing on immersive interaction and a robust inventory system.

Architecture and Design Patterns

To ensure scalable and clean code, I implemented several industry-standard design patterns:

- **Singleton Pattern:** Used for global managers (Inventory and Game Managers) to provide a unified access point for data persistence.
- **State Pattern:** The Goblin AI was built using a Finite State Machine. This allows entities to transition seamlessly between Patrol, Chase, and Attack states based on player proximity.
- **Data-Driven UI:** I decoupled the UI from the core logic. The inventory data is stored independently and serialized into JSON files, ensuring that player progress is preserved through a persistent save/load system.

Implementation Details

The core challenge was the Slot Load system with UI connection. I focused on ensuring that visual slot updates remained perfectly synchronized with the underlying data to avoid common errors. The system supports:

- Swapping items between slots without data loss.
- Consumables (food/potions) that dynamically modify player stats like speed or health.
- A dedicated detail panel for item descriptions and actions (Use/Delete).

Personal Assessment and Reflection

Designing the world, a peaceful village adjacent to a goblin-infested cave, allowed me to showcase level design and atmospheric audio. A key design choice was making the player vulnerable (no attack mechanics), which heightens the difficulty and encourages strategic movement.

This task was a valuable opportunity to reinforce my UI/UX skills, an area I hadn't worked on recently. It reminded me of the vital importance of continuous learning and practice. While managing the project scope was challenging, I am satisfied with the fluid animations and the cohesive experience achieved. I look forward to further refining my technical expertise in a professional environment.