Unity & Unreal Engine Sample Project

Game Design Document

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Summary

1. About Project

This a sample project with some basic rules to understand the difference when developing for both engines Unity and Unreal. The idea is to achieve the same game feel and mechanics in both engines. But not exactly having the same code "line for line", it must use everything the engine has to offer in order to make the development process as smooth as possible.

Genre: Action
Perspective: 3D Top-down
Main platform: PC

2. Tools

We want to keep things as simple as possible, the main focus for this is not really graphics, so for this we are using the same asset pack, same UI images and same animations for both projects.

2.1. Assets:

Animations: Adobe Mixamo
Asset Pack: Synty Studios: POLYGON - Prototype Pack
UI Assets: Kenny - UI Pack

2.2. Engines

We want to keep the engines as vanilla as possible, so we are not using any third party assets for both of them. We want to use the most that each engine as they provide

Unity: Version 2022.3.10f1 - C#
Unreal: Unreal Engine 5.3.2 - Blueprints

3. Game Mechanics

3.1. Entities

There must be a base entity class or object where the enemies and player will derive from. An entity will have the components such as health, movement, stats and any other component needed. An entity will be created from a sample data file. So it can have different names, healths and abilities. The player must choose a character before joining the match.

Player: Will be controlled by the player
Enemy: Can be hurt by the player

3.2. Game Mode

The base game mode should be a domination like base mode, where bases are protected by enemies NPCs that initiate with them. After all the enemies are eliminated from the base, the base is free to capture, so if a player is on it, he'll start capturing from 0-100% until it's owned by the player.

After the player has a base owned, he'll start earning points for tick. When he reaches a certain point he wins the game.

Win Condition: Reach a domination point amount.
Lose Condition: Player health reaches zero.

3.3, Enemies

For now we want to keep things as simple as possible, so no need to make AI for enemies, we can leave the AI for a next iteration of the game.

3.4. Interactables

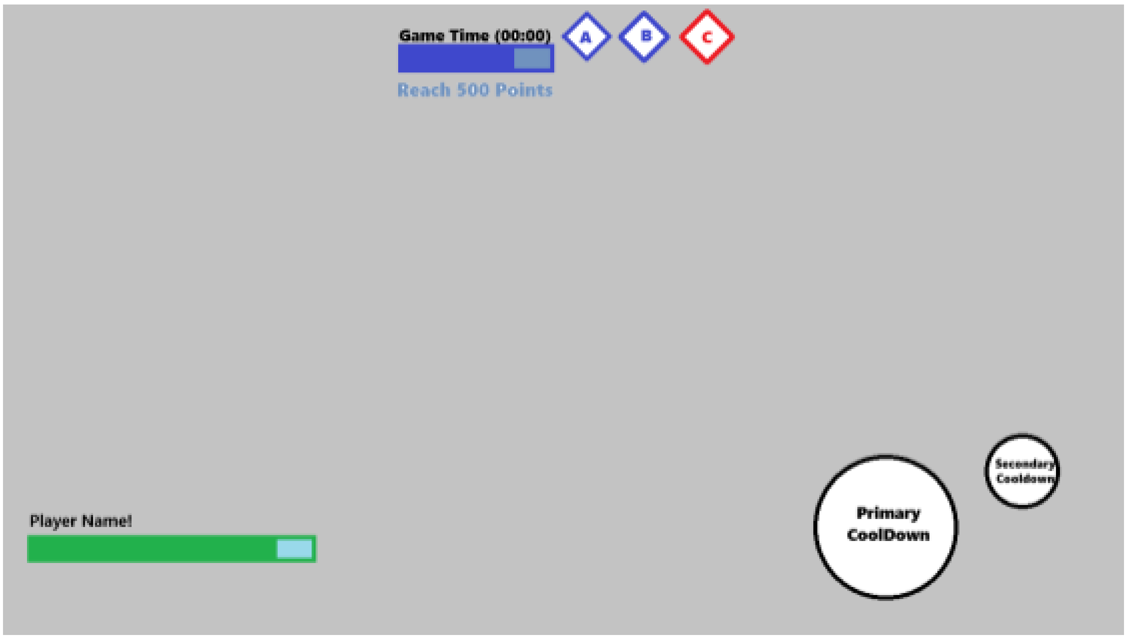
There must be an interactable object for players to interact with, there can be many things, a chest that heals, a light that lights up, a door that opens. This must be opened to extend to anything we want. We must have an option to "Hold to Interact" and "Click to Interact".

3.5. Player Abilities

Player must be able to shoot fireballs and cast an AOE spell where he's aiming. We must also leave it open for new abilities to be added in the future.

4. UI

In the UI we want to show the player health and name, bases captured and skills with cooldowns.



UI Template

5. Controls

Movement: WASD
Aim: Mouse
Fire Primary Ability: Mouse 1
Fire Secondary Ability: Mouse 2
Interact: F