



CPA 2: HDRP Game

BAGDP2205 Technology

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Summary

For this project, I am attempting to create a tower defence game where a player defends their campfire against zombies using turrets. These turrets are built from the wood they collect when chopping trees.

Shaders

This demo currently makes use of two different shaders with a plan for a third. The two shaders currently in use are an outline shader used on most objects and a dissolve shader for objects that despawn. The third is a highlight shader for highlighting interactable objects when they are currently selected; however, I am having trouble implementing different shaders on the same object.

Object Pooling

The demo currently has a half-working object pool for the waves of zombies that need to spawn in.

NPC Interactions

The zombies will be interactable NPCs that the player will be able to damage and vice versa.

Polymorphism

The demo will include many different types of turrets.

State Machines

The demo already includes a simple state machine in the form of the pause menu, which can evolve into a greater state machine. The planned state machine to be included is for the turrets to be in different states: Unbuilt or Built, and Searching or Firing.

Scriptable Objects

I am unsure what to apply scriptable objects to.

VFX

The three VFX graphs I intend to use are gun flashes, blood splatters and fire particles. I am currently encountering a problem where VFX don't visually appear when using my home computer.

I need help with...

I need help applying multiple shader materials to the same object without problems and fixing my VFX problem. I am sure I could find a suitable application for scriptable objects.

References

NeutronCat. (2020). *Simple Low Poly Nature Pack* [Unity Asset]. Unity.

<https://assetstore.unity.com/packages/3d/environments/landscapes/simple-low-poly-nature-pack-157552>

Piloto Studio. (2023). *Campfires & Torches Models and FX!* [Unity Asset]. Unity.

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