SOMETHING IN THE WOOD

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Figure 1: Add a nice wide figure here and replace this caption.

ABSTRACT

"Something in the Wood" is an independent FPS game created using Unity Engine. The game is a product that aims to recreate some of the most important aspects that most AAA FPS games should have. The game has an in-depth control system such as gun switching using the mouse scroll wheel, each weapon having different functionality, zoom in and zoom out for accurate aim, and as well as simple action such as sprinting and shooting similarly to other FPS games.

KEYWORDS

Unity, Unity Asset Store, Visualization, Graphic

1 INTRODUCTION

I have used Unity as an Engine to create a 3D-Fighting game called "Project Strike" before, I was the happy result but in that project, I have made some fundamental mistakes that a game developer should avoid. "Something in the Wood" is my second attempt of transferring my creativty into experience, at the same time a chance to correct the mistakes that I made from my previous projects.

2 RELATED WORK

I took an inspiration from my last game, "Project Strike" an 3D Fighting game create by me and my friend The Phong using Unity [1] and Mixamo [2].

3 METHOD

Upon starting to create this project, I tried to set up milestones that I need to complete at the end of the project. The first thing and the most important that every game should have is an interactive and

smooth control system, even though a control system is not the first thing that a player can see the first time they experience any game, but a smooth control system can keep the player sitting on the couch for hours. To do this I use a script provided by the Unity Standard Assets, attached that script to the Main Camera component. Once the basic of a game controller is completed, I developed an AI system that allows the enemy to follow the player if the player enters a certain range that the AI can see at the same time game the AI some different functionality and animation depend on the current state of the AI.

3.1 Implementation

Code for implementation of Weapon script, the most common aspect of every FPS game

```
private void ProcessRaycast()
{
    RaycastHit hit;
    if (Physics.Raycast(FPCamera.transform.position,
    FPCamera.transform.forward, out hit, range))
    {
        CreateHitImpact(hit);
        EnemyHealth target =
        hit.transform.GetComponent<EnemyHealth>();
        if (target == null) return;
        target.TakeDamage(damage);
    }
    else
    {
        return;
    }
}
```

3.2 Milestones

3.2.1 Milestone 1. An example could be: I brained storm the concept for my FPS, what kind of setting that I would like to have in my world, what tool should I used to implemented it.

3.2.2 Milestone 2. An example could be: At the end I decided to create an FPS horror game using Unity Engine since Unity Engine is created to make game, it would make the progress of making my game become easier than using Three.js alone.

3.2.3 Milestone 3. Start implementing the prototype of an FPS controller using existing FPS controller on the unity asset store as a model

3.2.4 Milestone 4. Start implementing the core system of an AI in a horror game, include action such as engage, attack, idle and follow.

3.2.5 Milestone 5. Creating functionality for decreasing health of the player and health of the AI whenever each of the target is being attack.

3.2.6 Milestone 6. Start create UI for the game. Death menu, Start menu, crosshair for player aim, zoom in and out system for some weapon.

Table 1: Table 1: Game Performance

Device	Performance
PC	60 FPS
Macbook	60 FPS

3.2.7 Milestone 6. Creating animation for the AI, for example death, run, attack and idle animation.

3.2.8 Milestone 7. Level design, creating terrain and tree to create a horror atmosphere.

3.3 Challenges

- Challenge 1: Switching the weapon using the mouse scroll wheel.
- Challenge 2: Making the AI rotate according to the player's position.
- Challenge 3: Zoom bug changing weapon while zoomed will keep the zoom for subsequent weapons.
- Challenge 4: Enemy will keep moving if they are dead.
- Challenge 5: Creating each different ammo for corresponding gun.
- Challenge 6: Player can still move even if the game is over.
- Challenge 7: Player rotation speed does not change even if the weapon is in zoom mode.

4 RESULTS

The result of this project is exactly what I had it my mine when I was in the brainstormed phase of the project. I successfully completed all the goal that I have set out from the start of this project during the fast forward presentation, starting from smooth controller, variety of weapon and different type of enemies.

Figure 2: Enemy chase state

5 CONCLUSIONS

This is one of the most interesting projects that I have done for a while because of the complexity that needs to be done to give the player a good experience, even though there is a lot of polish and

level design that still needs to be done after the submission of the Final Project report. As well as some export methods need to be done by using Unity Functionality to be accessed and played with WebGL.

REFERENCES

[1] 2021. *URL:https://assetstore.unity.com/packages/3d/props/guns/hand-painted-shotgun-61481* (2021).

[2] 2021. *URL: https://assetstore.unity.com/packages/3d/characters/humanoids/zombie-30232* (2021).