Home Alone Da Mountains

GDFUNDA S11 - Brooklyn Nets
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About the Game

Setting: Inside a home within the mountains of an unknown region

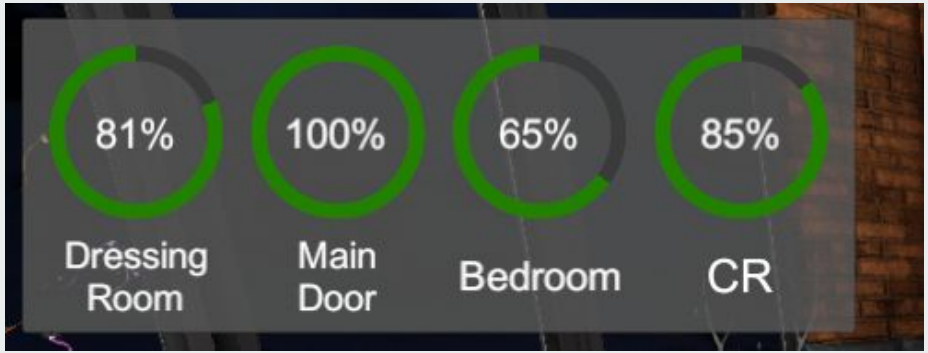
Description: As the night goes on and as you chill with the fire on a cold December night, you notice someone angrily knocking at your door. With help not coming at this time, it is now up to you to defend your home and fend off the intruder for as long as you can. Question is, how long can you last?

Game Controls

- **W** - move forward
- **A** - move left
- **S** - move backward
- **D**- move right
- **Left Click (on click)** - interact with object adj. to crosshair
- **Left Click (on hold)** - repair barricade
- **Spacebar** - Jump
- **Left Shift** - Run

Game Elements

Barricade Health Bars



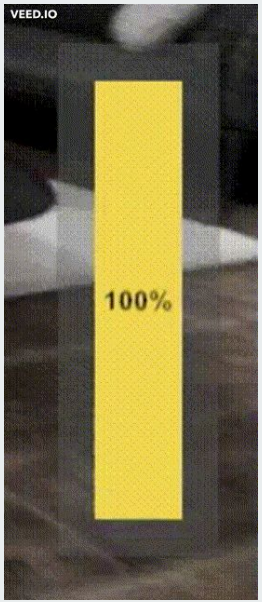
Each barricade in the game has health points of 100, and they can be found on specific parts of the house as indicated on the picture.

The intruders are the ones that degrade the health of these objects. The only way to regenerate the health of each barrier is to repair it by interacting with the green cube beside it (holding LEFTCLICK).

Losing a barricade will disable the player's functionality to activate the traps with it.

Game Elements

Stamina Bar



The stamina bar in the game is present in the UI in order to inform the player if the character can run/jump or restricted to walk.

If the player reaches the 5% stamina threshold and below, the player will go to “gasping for air” mode, wherein the player’s movement speed will be greatly reduced and jump is disabled until the stamina bar refills to 25%.

Game Elements

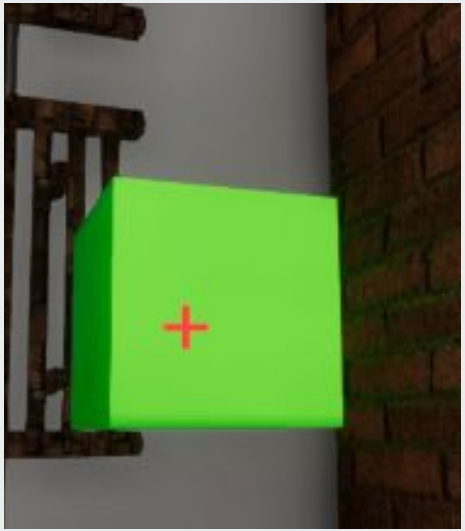
Trap Cubes

Trap cubes serve as a defensive action towards the intruder. The cube has two modes: (1) red mode - means that the cube is ready to operate and (2) grey mode - means the the cube is on cooldown (30 seconds).

This type of cube can only be activated when the intruder is currently on the location of the trap cube that you are clicking on. (eg. bedroom trap cube can only be activated if the intruder is doing damage on the bedroom)

Game Elements

Repair Cubes



The repair cubes are used to repair barricades that were damaged. In order to trigger these cubes, the player must press and hold the left click button for 5 seconds for the barricade to recover 40 points of health. This function can only be used on damaged barricades (100% and 0% health are excluded for this function). Barricades that were destroyed can no longer be restored/repaired.

Relevance to the Theme: “What Home Means To You?”

As soon as we saw the theme reveal, we were honestly baffled on what game to do that closely relates to the given theme. Our group had 2 definitions of home, and they were:

1. A safety net you build for yourself wherein all your problems are nonexistent: a place where you feel safe
2. A feeling of relaxation and familiarity

We wanted to incorporate the 2 definitions of “home” into our game and during our group meeting, we jokingly discussed 2 movies that felt like home to us, as well as had themes of “home”, which are: “Home Along Da Riles” and “Home Alone”, That discussion gave us a lightbulb moment that gave birth to the concept of the game that we have right now.

Relevance to the Theme: “What Home Means To You?”

Firstly, we designed our game world such that it caters to the feeling of comfort and relaxation that we want to address to the player. The home in our game feels cozy, and it is a place in which we believe we would like to spend a day in.

Secondly, our game contained our version of the famous “Home Alone” final act wherein Kevin had to protect his home from the invading burglars. However, our game does not have the goal of defeating the burglars, but only counting the time it takes for the burglars to get in.

Our message for this game still stands firm with regards to what home means to us, and that is a safe place that you build for yourself in order to escape your problems. But this is life, and life always contain problems in which you cannot escape. Home now becomes a concept in which you fight for as life’s problems knock and bash at your door.

This is the message that our game wants to convey. A home is a place that you built for yourself in which it is worth defending for, as life’s problems enter your door.

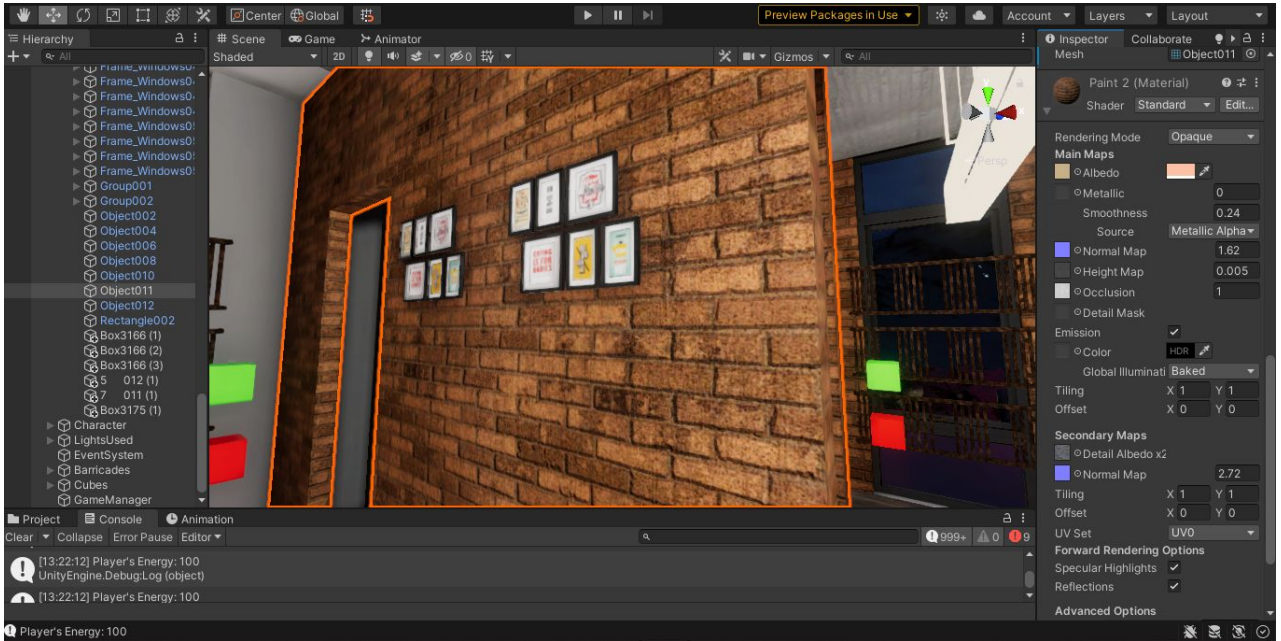
Core Features Required

Core Feature 1 - Physically Based Shading

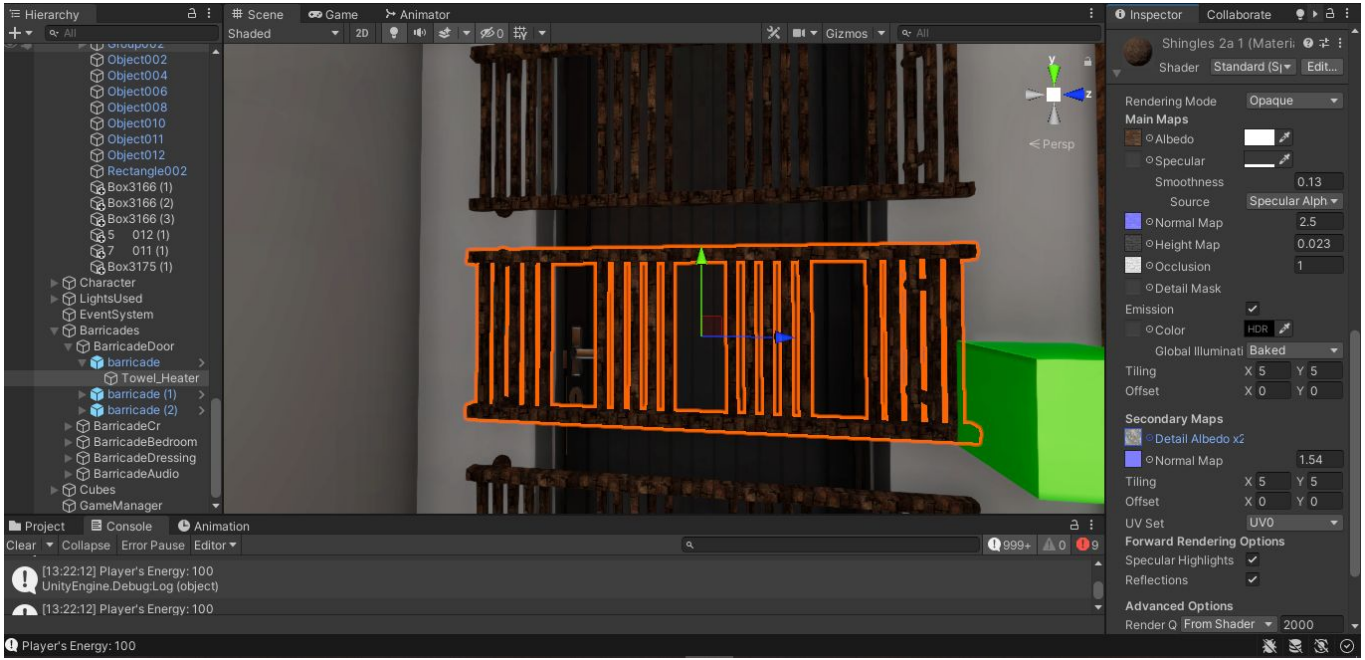
In order to build the level that is present in the game, numerous models, materials, and textures were used. Everything that is on the interior as well as on the exterior of the house was sourced from the ArchVizPRO Interior Vol. 5 package as well as the PBS Materials Variety package.

Core Feature 1 - Physically Based Shading

One of the main house components that we used PBS for is when we made the texture for the walls of the game. We decided that we did not want to use just paint itself. We instead combined the gritty texture of paint in the PBS pack and the modern feel of bricks to make the gritty brick wall that is present in the game.



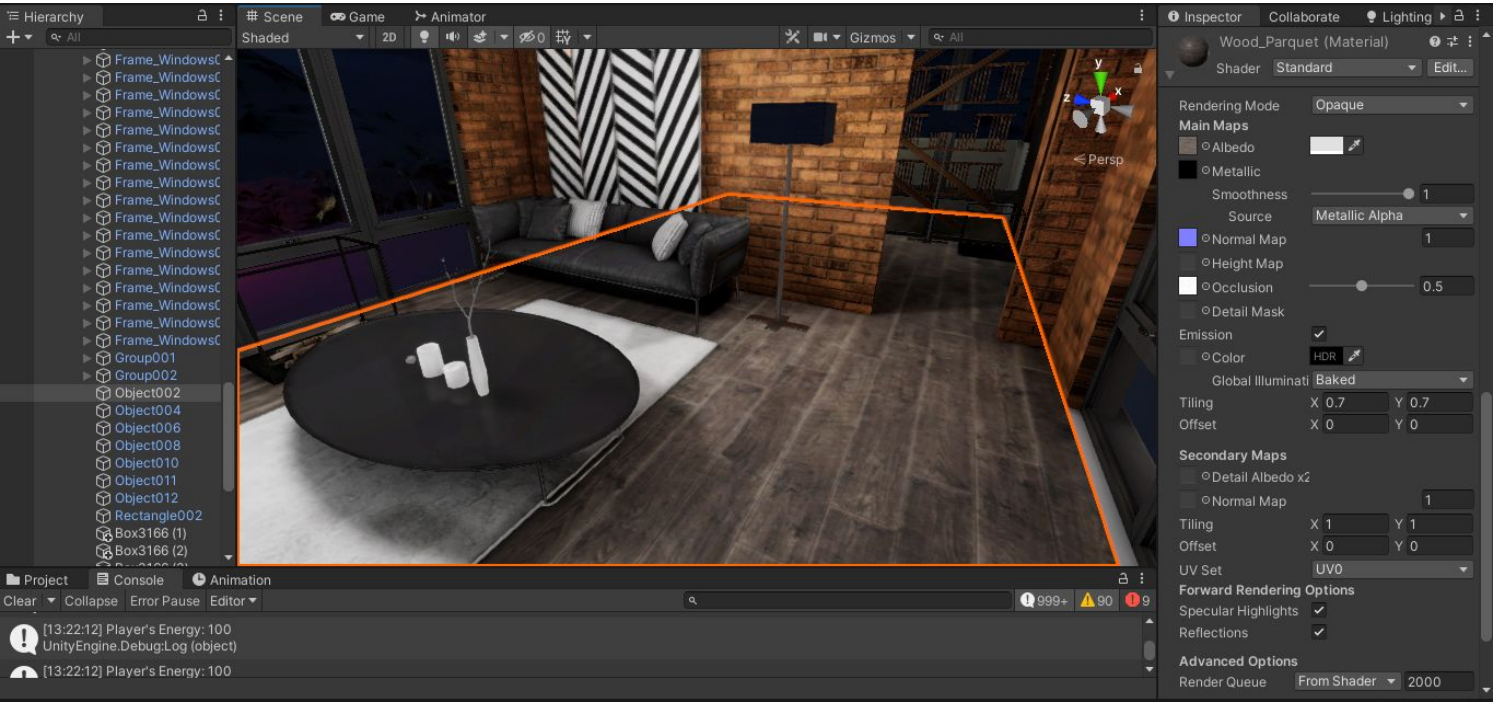
Core Feature 1 - Physically Based Shading



In order to make the wood texture look more realistic (like it came from a log or had worn out due to time), we modified the wood shingles texture by modifying the texture tiling as well as its smoothness and normal maps.

We also added a secondary map (which is a bark) in order to give the wood a more authentic look as if moss and other plants had grown on it over time.

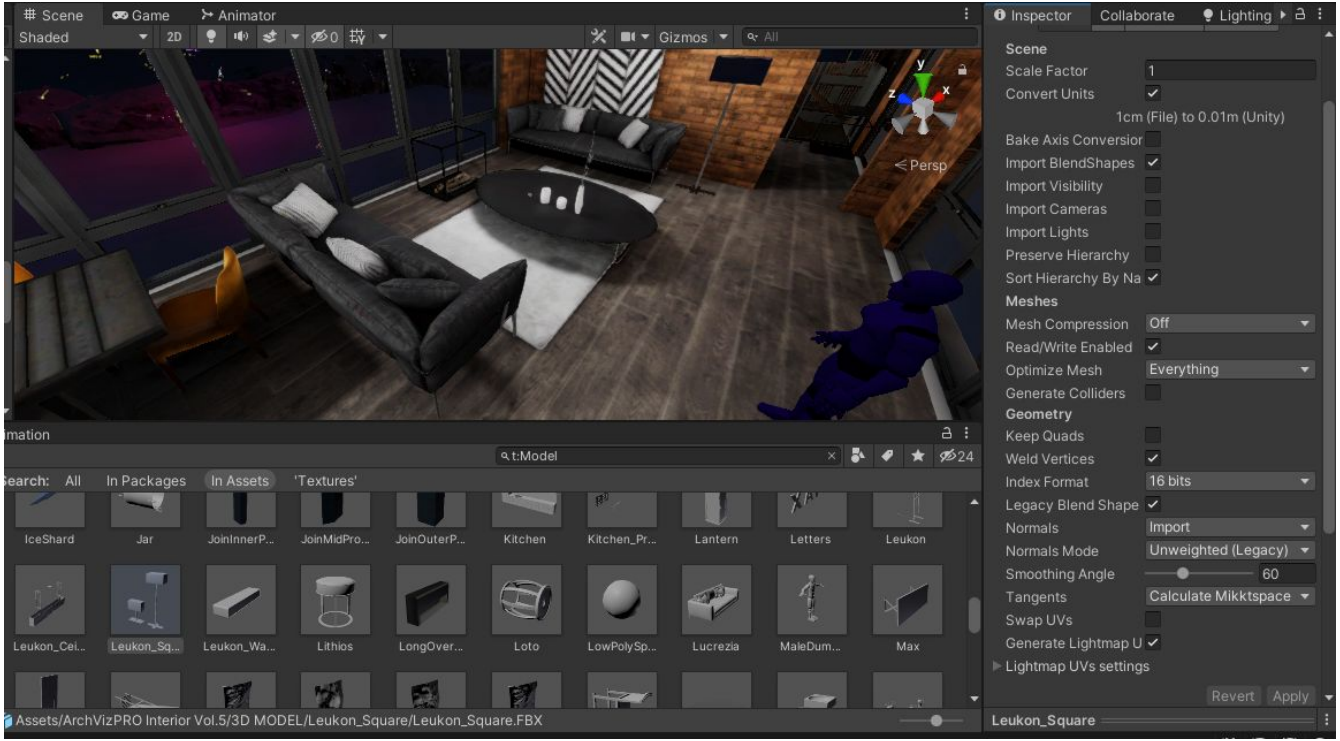
Core Feature 1 - Physically Based Shading



We also used another type of wood texture in order to give texture to our flooring as well as to some wood-based furnitures.

The material that can be seen on the picture was taken from the ArchVizPRO package mentioned earlier.

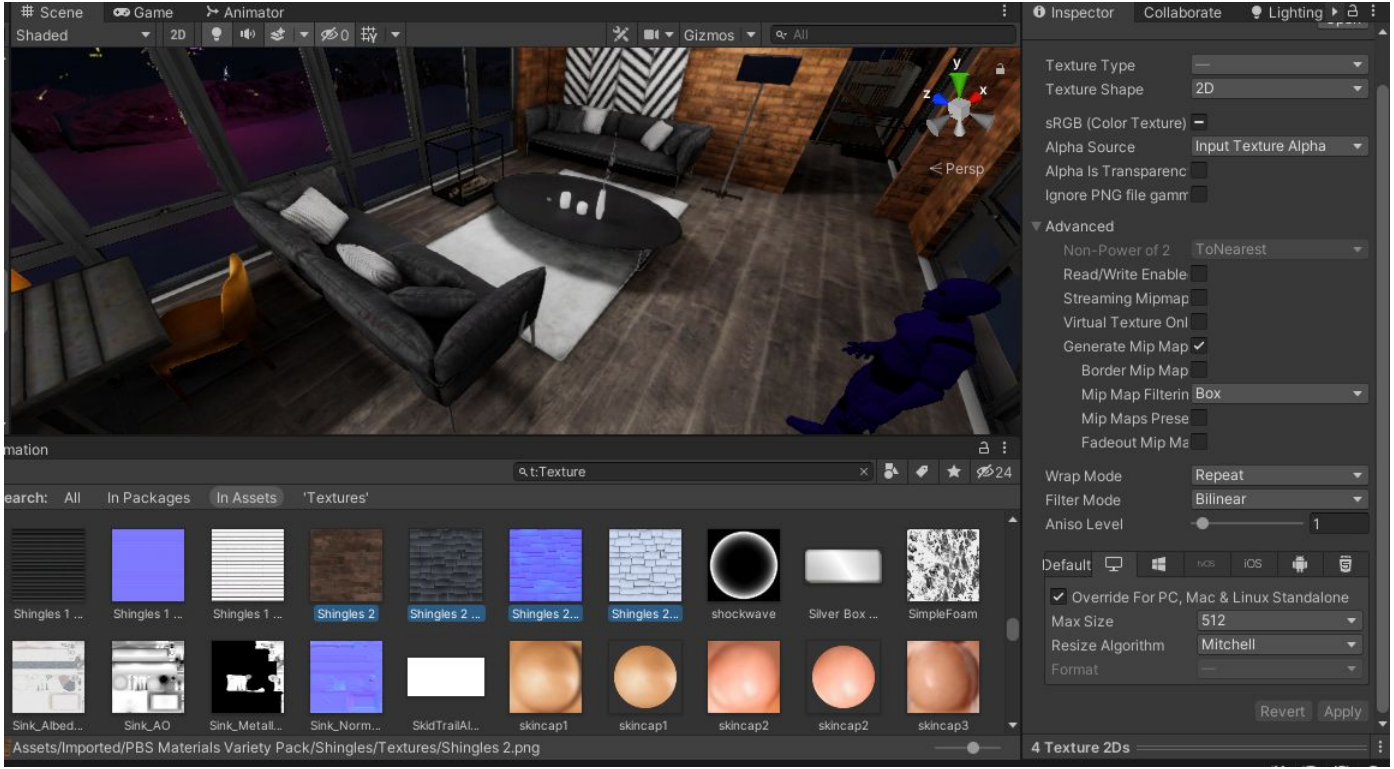
Core Feature 1 - Physically Based Shading



As mentioned earlier, all of the materials, textures, and models that were used in the game were sourced from the ArchVizPRO Interior Vol.5 package and the PBS Materials Variety package.

All models used had their own generated UV lightmap as well as the textures used were modified and reduced to 512 max size in order to cater to a relatively small game build size, while still retaining a high texture quality to the eyes of the player (examples shown below).

Core Feature 1 - Physically Based Shading



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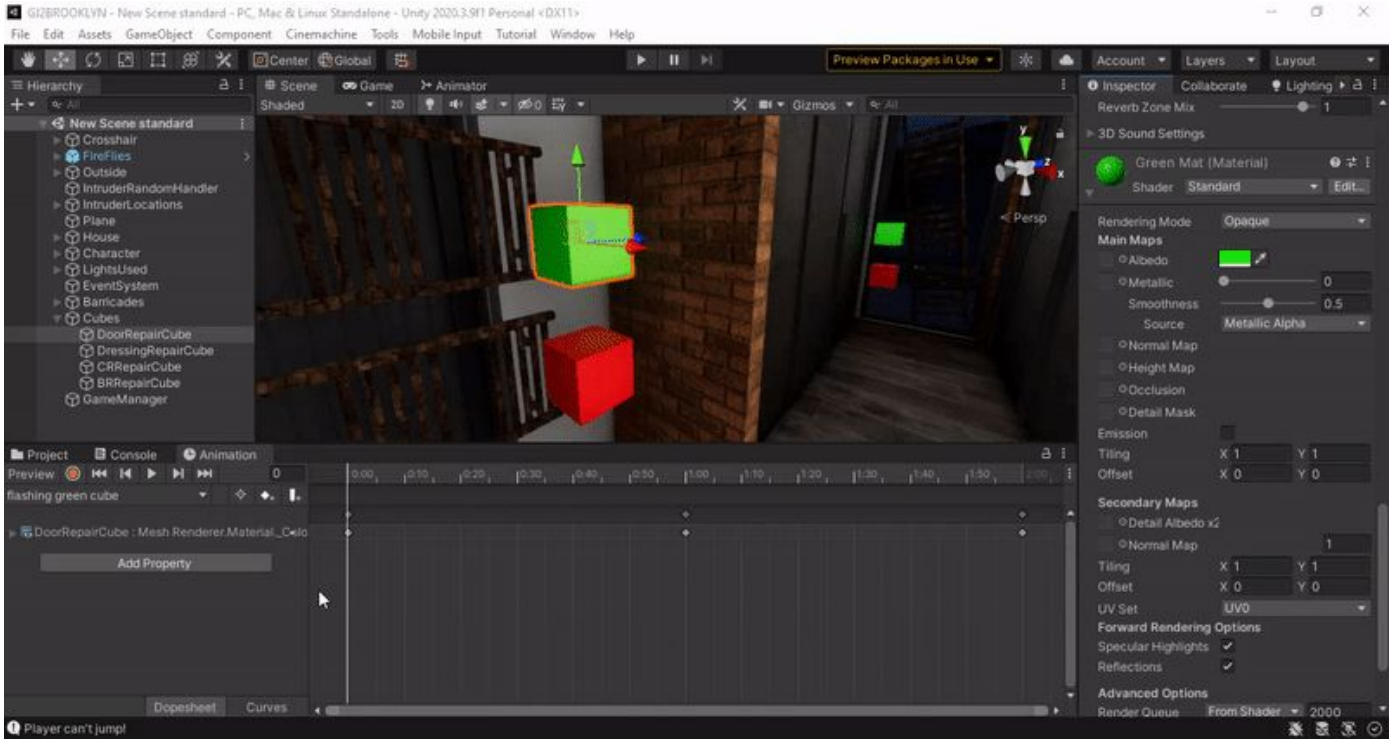
All models used had their own generated UV lightmap as well as the textures used were modified and reduced to 512 max size in order to cater to a relatively small game build size, while still retaining a high texture quality to the eyes of the player (examples shown below).

Core Feature 2 - Animation System

For our animation system, we wanted to implement it with the sole purpose of providing information to the player during gameplay, whether it be for indicating that a interactable cube can be used, or the visual status of a barricade alongside its actual health in the UI.

In this core feature, we utilized both the Animation tab as well as the Animator in order to make simple flashing animations as well as complex animations that were needed in the game. In the next slides, we will be exhibiting each component of the game wherein an animation system was used.

Core Feature 2 - Animation System (Cubes)

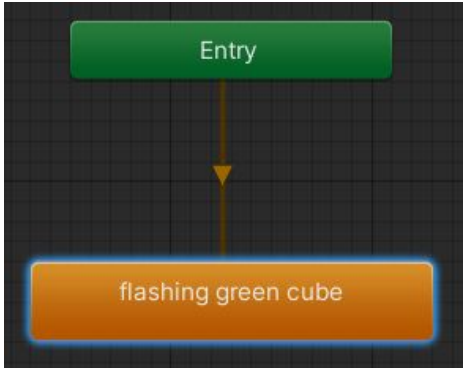


For the interactable repair/trap cubes, we wanted to use a simple flashing animation for it in order to indicate to the player that the cubes can be interacted with.

Repair cubes always flash during gameplay, whereas the trap cubes flash if it can be used, and they gray out if they are on cooldown.

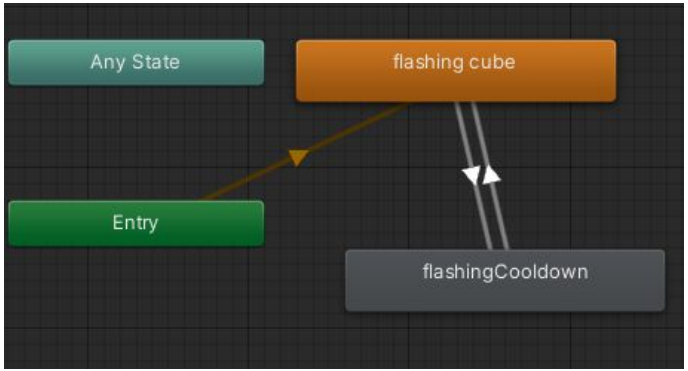
Core Feature 2 - Animation System (Cubes)

FSM of the “Repair Cube”



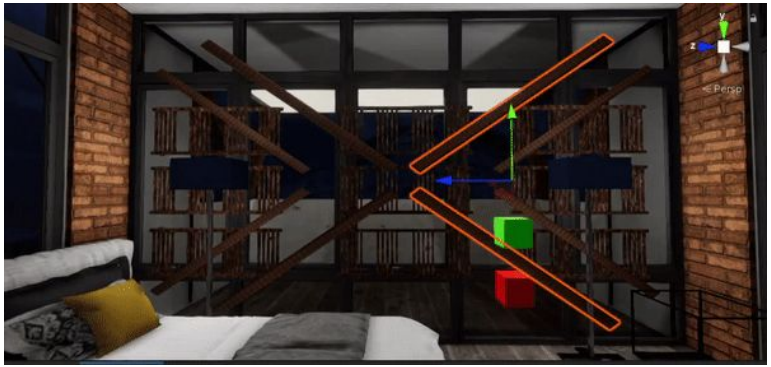

```
void Update()
{
    if(!isAvailable)
    {
        anim.SetBool("isCooldown", true);
        cooldown_ticks += Time.deltaTime;
        if(cooldown_ticks >= trap_cooldown)
        {
            isAvailable = true;
            cooldown_ticks = 0.0f;
            anim.SetBool("isCooldown", false);
            /*
             * Can add a ticking sound when its available again
             * */
        }
    }
}
```

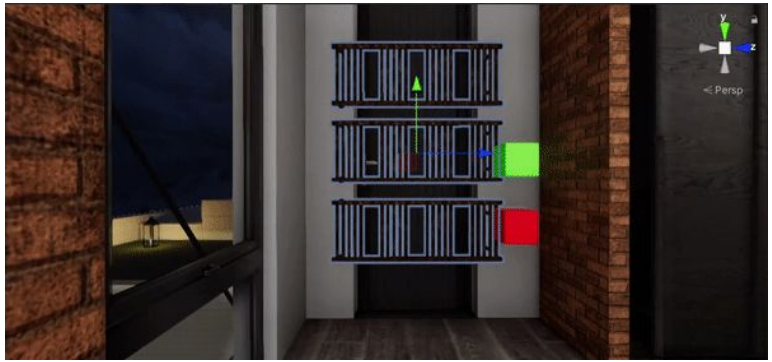
FSM of the “Trap Cube”



This code block checks if the trap if is in cooldown, when the cooldown is done, then the “trap cube” will return to “red mode” indicating that the trap functionality can be used again.

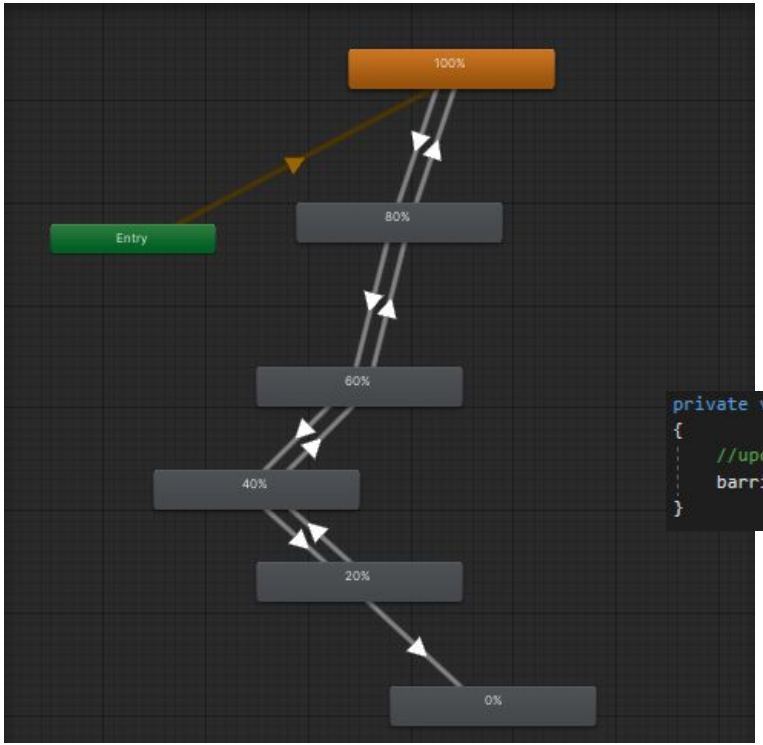
Core Feature 2 - Animation System (Barricades)





Since all of our barricades are different in style, each of them has a unique animation set. These animations show the current state of the barricade's health. When the health points of the barricade reach 0, then the image will show a dilapidated parts of the barricade.

Core Feature 2 - Animation System (Barricades)




```
private void callAnimations()
{
    //update the percentage of the barrier's health to the animator
    barrierAnim.SetFloat("Percentage", health);
}
```

This function is called in the update function of the “barrierStatus” script found in each barricades objects.

A percentage threshold of 100% will show a complete set of barriers, an 80% - 20% will show the degradation of the quality of each barrier in the set and a 0% removes all the barriers. This animations are factored by the deconstruction of the intruder trying to break the barrier and the player reconstructing it with the repair cube functionality.

Contributions

-EMERSON PAUL P CELESTIAL

- Level Design, Gameplay Scripting

-ALDREY D GAURANA

- Level Design, Gameplay Scripting

-ERYN GABRIEL C. TALLADOR

- SFX and Environment Design , Gameplay Scripting

-JOSEPH CHRISTOPHER C. SANTOS

- UI Design, Gameplay Scripting