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CS 485
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Midterm Project Writeup

For my group's video game, we are working on a 2D space shooter with some 3D graphics. So far in Unity, I have learned to create a simple enemy character using the engine and some assets created by other people. I have also learned some basic AI functions, such as making an enemy that can face the player and follow them. I was able to write these functions by following a couple YouTube videos and reading an enemy AI tutorial on a non-Unity site.

For the Game ideas, I proposed the type of music the game should have, as well as a few mechanic ideas. I've suggested that eventually our ship should be controlled using the typical WASD and face wherever the mouse is, and the two mouse buttons could be different shooting buttons. I've also been designing our boss mechanics. For now, I want the boss to have two abilities on a timer. One that sends damage out everywhere in a close radius and one that shoots a very powerful beam straight out. When this is implemented, I will most likely change how the boss is always facing the player. I will most likely have the boss sit still for both abilities so that it's not completely unfair to the player. I'm also going to be designing the other boss abilities as well.

For the song, I used FL Studio 12 which is a digital audio workstation with built in synthesizers to use the sounds and mixers to change the sounds (reverb, delay, etc.). The program allows me to create sounds and place them into an order. Every part of a song can be made using the program alone. I used three total synthesizers, two from FL Studio. These two are called Sakura, which has more eastern-type sounds, and Morphine, which has more real instrument sounds. I also used a synthesizer that doesn't come with FL Studio called Nexus. Nexus has thousands of built in sounds and can be used with a MIDI controller. After all the

melodies were placed correctly in the song, I used build in mixers to make the song sound better. I mostly had to just EQ the sounds and position them so they play in different parts of the headphones and bleed less with each other. The bullet sounds were made from percussion crashes and mixing to change the pitch and sound. I pitched the note of the sounds much higher and EQ'd a few things out of them. The graphics and models in the game were found by another group member and I'm not sure where he got them, but I had access to them. These models included a few spaceships, some asteroids, and a background. The background was obtained from Google Images and wrapped around by another group member.

Within the group, I have started on our first boss AI. I used a model one of my group members obtained, scaled the model up, and wrote some basic code in it's controller. Currently, All it does is follow and face the player, and take damage when shot by the player. I've also finished the first song for our game using FL Studio 12, which sounds like a song that would be used for a space shooter. It was an electronic arpeggio, a synthesized violin, electronic trap-type drums, an 808 bass and some background sounds. I've also created a couple bullet-type sounds using the same program.

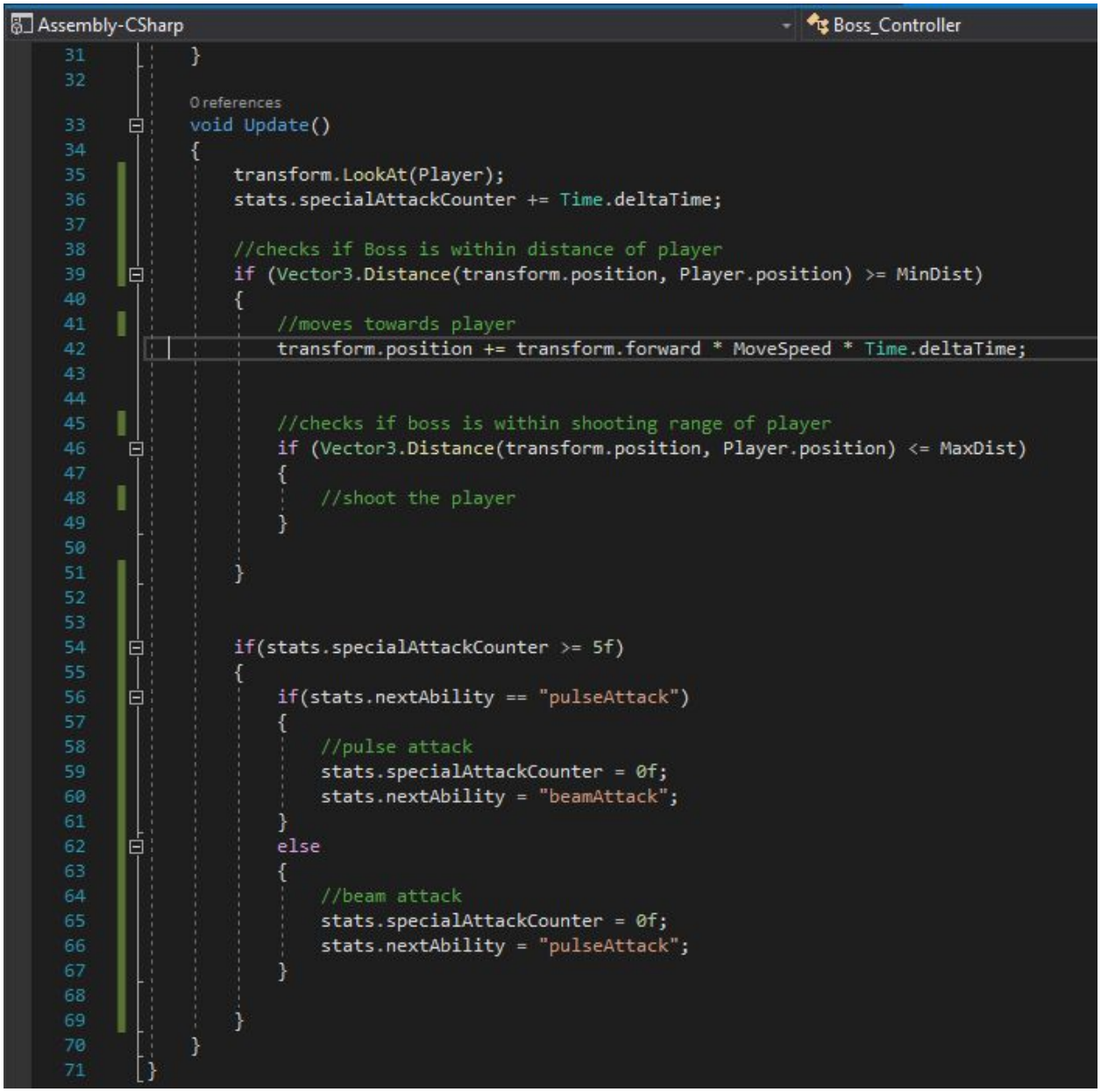
For the next few weeks, I plan to make some more sounds and attach them to Unity, as well as work on a second song for the game. I'm thinking the game will only have about 3 songs since that's a less important aspect. I also plan to finish the first boss and start a second, right now I need to make its shooting and special abilities work. The song and sounds are going to be done with the same programs I used for the first ones. I'm going to have to keep following some AI tutorials to figure out how to make the bosses function correctly. Right now, When I try to make the boss shoot, it breaks its follow function so I have to figure out why that's happening.


FILE EDIT ADD PATTERNS VIEW OPTIONS TOOLS ?
Cymatics - Astro..Hop Sample Pack
Cymatics - FL Studio Starter Pack
Cymatics - Futur..Bass Starter Pack
Cymatics - Hip Hop Starter Pack
Cymatics - House Starter Pack
Cymatics - Posty..Hop Sample Pack
Cymatics - Trap Starter Pack
Cymbal
David Bowie - Five Years
Deodato - September 13
Elements of Dystopia
Elements of House
Elements of UK Dance
FILLS
FOLEY
Fred Wesley & th..orns - Four Play
Fruity
Funkadelic - You'll Like It Too
Funky Inc - Kool Is Back
Gaz - Sing Sing
HATS
HiHat
I Gres - Restless
Ike & Tina Turne..' And Carryin' On
Ike & Tina Turn..key Tonkey Woman
Joe Tex - Papa Was Too
JUICE KIT
Kick
KICKS
LAUGHS
Led Zepplin - Wh..he Levee Breaks
Lee Dorsey - Swe..ly Thru The Alley
Loopmasters - Deadmau5 XFER
LOOPS
Mary Jane Girls - All Night Long
Monk Higgins - O..(Plays All Alone)
Orange Krush - Action
Perc
PERCS
Pleasure - Bouncy Lady
Rose Royce - Do Your Dance
Roy Ayers - The Boogie Back
Rufus Thomas - The Breakdown
SCALES
SFX
SHAKERS
SNAPS
Snare
SnareDrum
SNARES
South.Park.S22E...x264-NVS[rarbg]
Steve Arrington..obody Can Be You
Steve Arrington..eak At The Knees
SYLENTH1
Taana Brader - Heartbeat
Channel rack


FILE EDIT ADD PATTERNS VIEW OPTIONS TOOLS ?
SY Trance Guitars
Channel rack

Assembly-CSharp | Boss_Controller

```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;
using UnityEngine.AI;

1 reference
public class Boss_Stats
{
    public float maxHealth;
    public float currentHealth;
    public float specialAttackCounter;
    public string nextAbility;
}

1 reference
public class Boss_Controller : MonoBehaviour

{
    public Boss_Stats stats;
    public Transform Player;
    int MoveSpeed = 20;
    int MaxDist = 10;
    int MinDist = 5;



    0 references
    void Start()
    {
        stats.maxHealth = stats.currentHealth = 100;
        stats.specialAttackCounter = 0f;
        stats.nextAbility = "pulseAttack";
    }

    0 references
    void Update()
    {
        transform.LookAt(Player);
        stats.specialAttackCounter += Time.deltaTime;

        //checks if Boss is within distance of player
        if (Vector3.Distance(transform.position, Player.position) >= MinDist)
```


Assembly-CSharp
Boss_Controller
}
0 references
void Update()
{
transform.LookAt(Player);
stats.specialAttackCounter += Time.deltaTime;
//checks if Boss is within distance of player
if (Vector3.Distance(transform.position, Player.position) >= MinDist)
{
//moves towards player
transform.position += transform.forward * MoveSpeed * Time.deltaTime;
//checks if boss is within shooting range of player
if (Vector3.Distance(transform.position, Player.position) <= MaxDist)
{
//shoot the player
}
}
if(stats.specialAttackCounter >= 5f)
{
if(stats.nextAbility == "pulseAttack")
{
//pulse attack
stats.specialAttackCounter = 0f;
stats.nextAbility = "beamAttack";
}
else
{
//beam attack
stats.specialAttackCounter = 0f;
stats.nextAbility = "pulseAttack";
}
}
}
}