

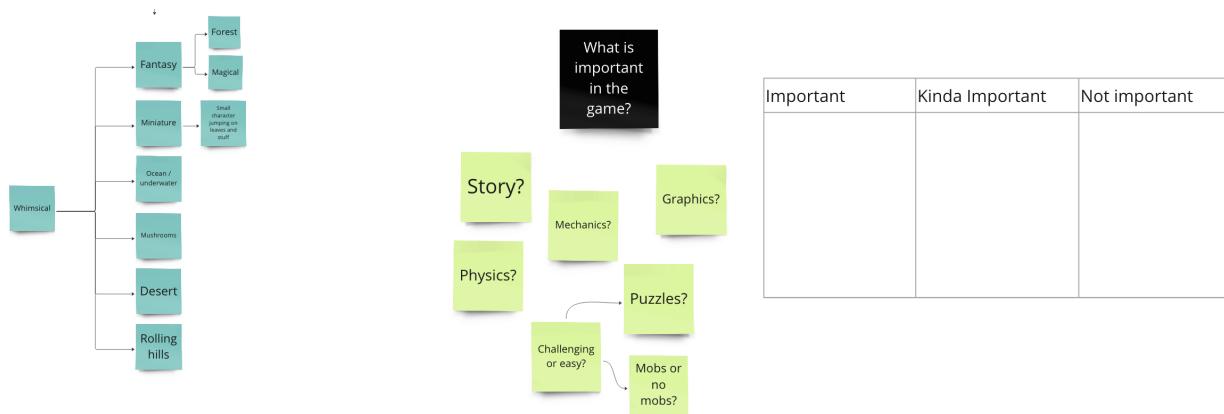
Chaleunsouk-Brianna-A4-Process

Design Concept/Process

- The first thing our team did was some brainstorming on miro.com
- We organized our thoughts into a chart that included the genres of some game ideas and the pros and cons
- I came up with a Dungeon and Obby (parkour) genre games, Chris came up with Tower Defense and Platformer, Beth came up with Shooter (non-fps) and Arcade

genre	pros	cons	THINGS TO CONSIDER
platformer	<ul style="list-style-type: none"> • Lots of design room • Repeatable assets • 9-slice works well 	<ul style="list-style-type: none"> • Collision coding can be hard • Vector Physics 	time knowledge tasks
dungeon type game (foot, keys, fighting)	<ul style="list-style-type: none"> • Lots of design room • Monsters • Loot • Rogue-Like • Could create a cool story (or not) 	<ul style="list-style-type: none"> • A lot of elements to design (but cool) • hard to code :(workload
obby (parkour)	Lots of design room	<ul style="list-style-type: none"> • Limit of obstacles • Has to be 2D • Repetitive? 	other classes
shooter (not fps)	<p>pow pow</p> <p>Easy to code</p>	Limited design space Close to arcade	
Tower defense	Lots of design room	<ul style="list-style-type: none"> • Getting enemies to follow a specific path is hard • Trigonometry 	
Arcade	easy to do	no fun :(

- We all decided on Platformer!
- Trying to figure out the Setting and Theme



Everyones Role

- Chris: Coding
- Beth: Mob design
- Me: Level design (maze, platform placement, enclosed)

Setting and Theme

- Miniature map is the winner!

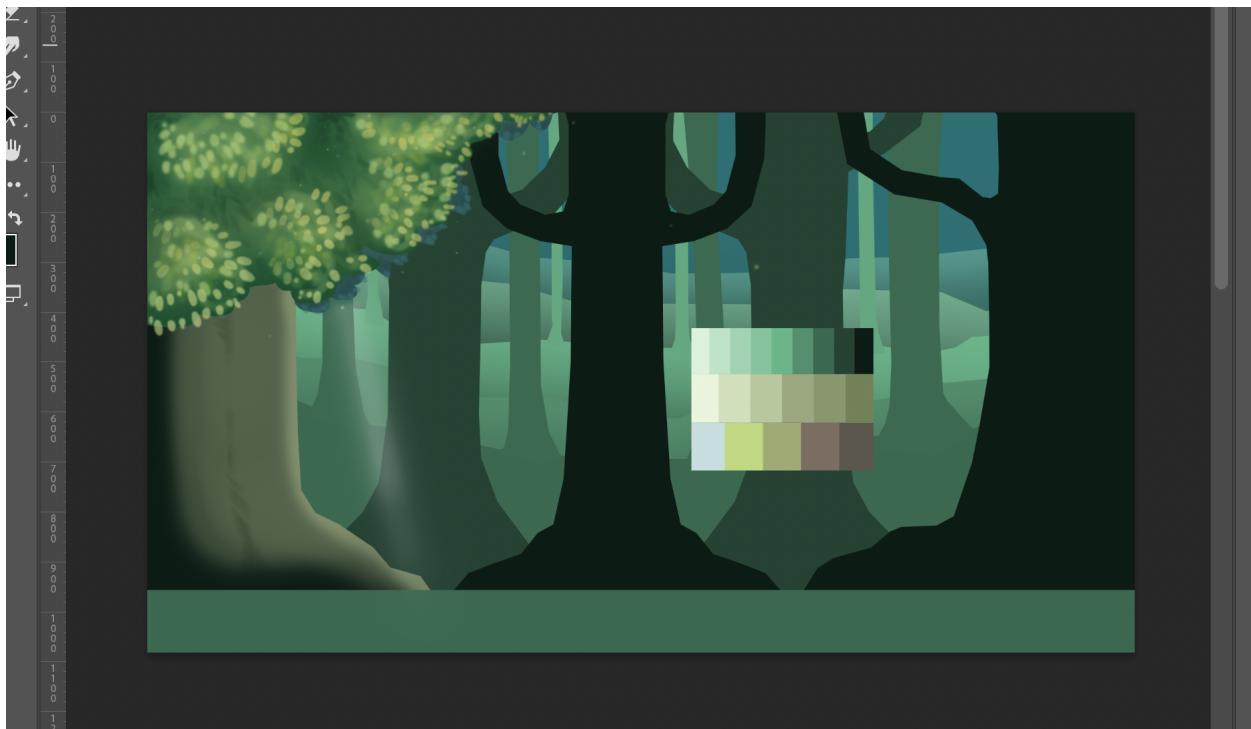
Code Notes

- Line 53, Line 63, Line 29 (Object.cs collision code)
- AddObject(new variable(change coordinates, new Input()), 1); | NOTE: If you are adding something for a specific level just remove the level
- C_SPRITE
- Virtual: Every object has the ability to override
- Sprite would be a component (E_ComponentID)
- Create a class eventually C_SPRITE : Component (Variable for file that its loading, animation stuff)

Level Design Process

- Our group decided on a forest atmosphere where the player has to fight giant bugs and hop over obstacles
- Used Photoshop for the Level Design

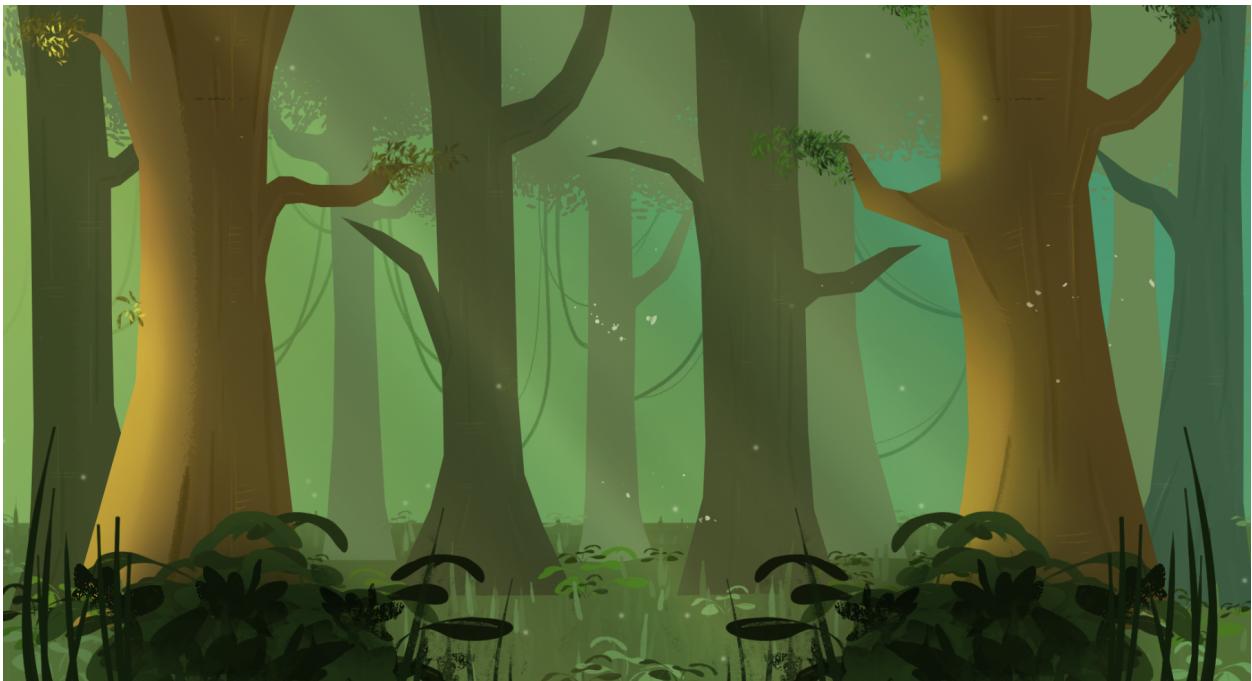
- First forest attempt: I have not drawn a background in a while and decided to test out my dimension and composition skills. It wasn't bad but honestly it was not really good either. The colour scheme was slightly off and I had no idea how detailed to make the leaves!



- This definitely would have caused problems with trying to add movement to the background (parallax scrolling) because the trees were cut off on the sides
- I restarted and began mapping out my tree - making them all unique sizes and colours while REFERENCING pictures (references are important)



- Made shading more minimal to match the theme of the characters and game concept
- Tried to go for a “low poly” type of look
- Added a FOREGROUND, MIDGROUND, BACKGROUND so I can put those layers later in a sprite sheet
- Added finishing details, shading, lighting, and more



Coding Notes

- Added code to add the background: Trees, Color, Foreground, Midground, Background etc
- After I implement the object into Program.cs to add them to the game

```

using Raylib_cs;
using System;
using System.Collections.Generic;
using System.Linq;
using System.Numerics;
using System.Text;
using System.Threading.Tasks;

namespace a4_2D_Game
{
    internal class Trees : Object
    {
        public Trees(Vector2 pos) : base(pos)
        {

        }

        public override void Awake()
        {
            //Put any components you want to attach here

            base.Awake();
        }

        public override void Load()
        {
            name = "TREES";

            //Image size of ground
            startSize.X = 571;
            startSize.Y = 292;

            //Load texture for spriteComponent
            spriteComponent.LoadSpriteTexture(S_TextureHandler.GetImage("background"));

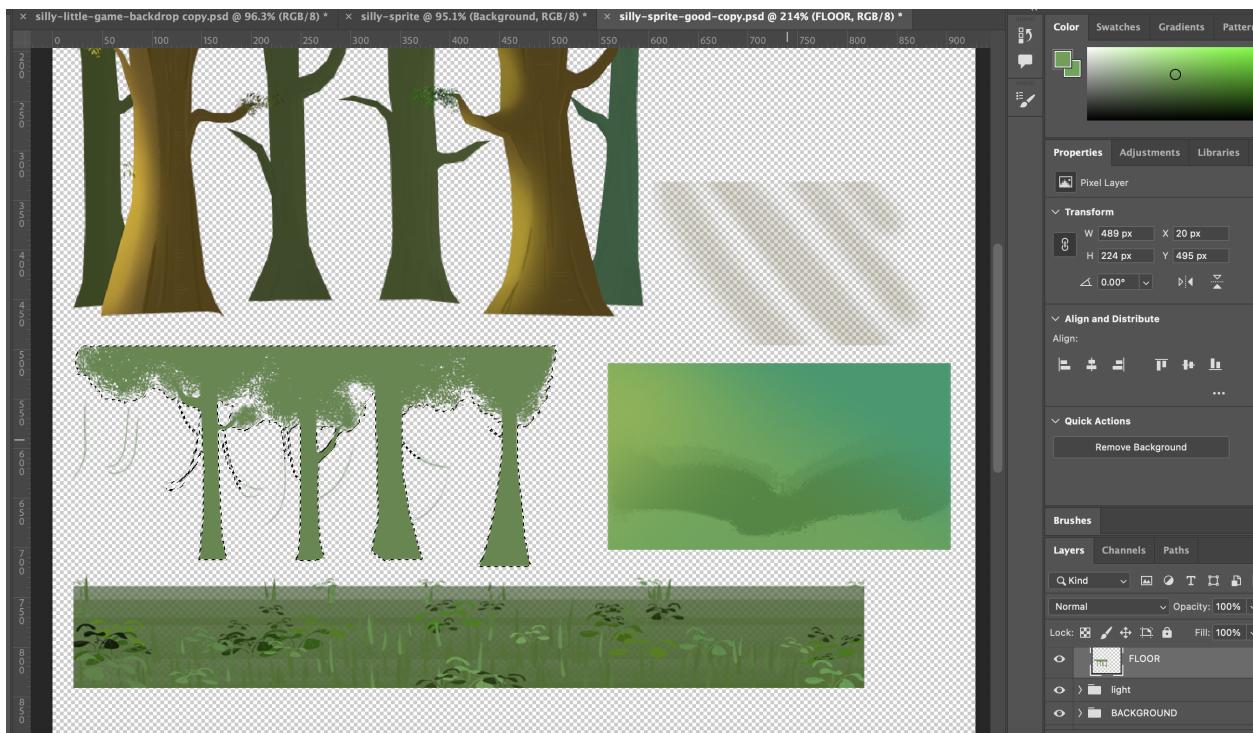
            //Set source rectange if there is no animation component attached.
            sourceRec = new Rectangle(24, 176, (int)startSize.X, (int)startSize.Y);

            //Set default values that may be important. Scale object here instead of changing size
            scale = new Vector2(2.6f, 2.6f);
            rotation = 0;

            base.Load();
        }
    }
}

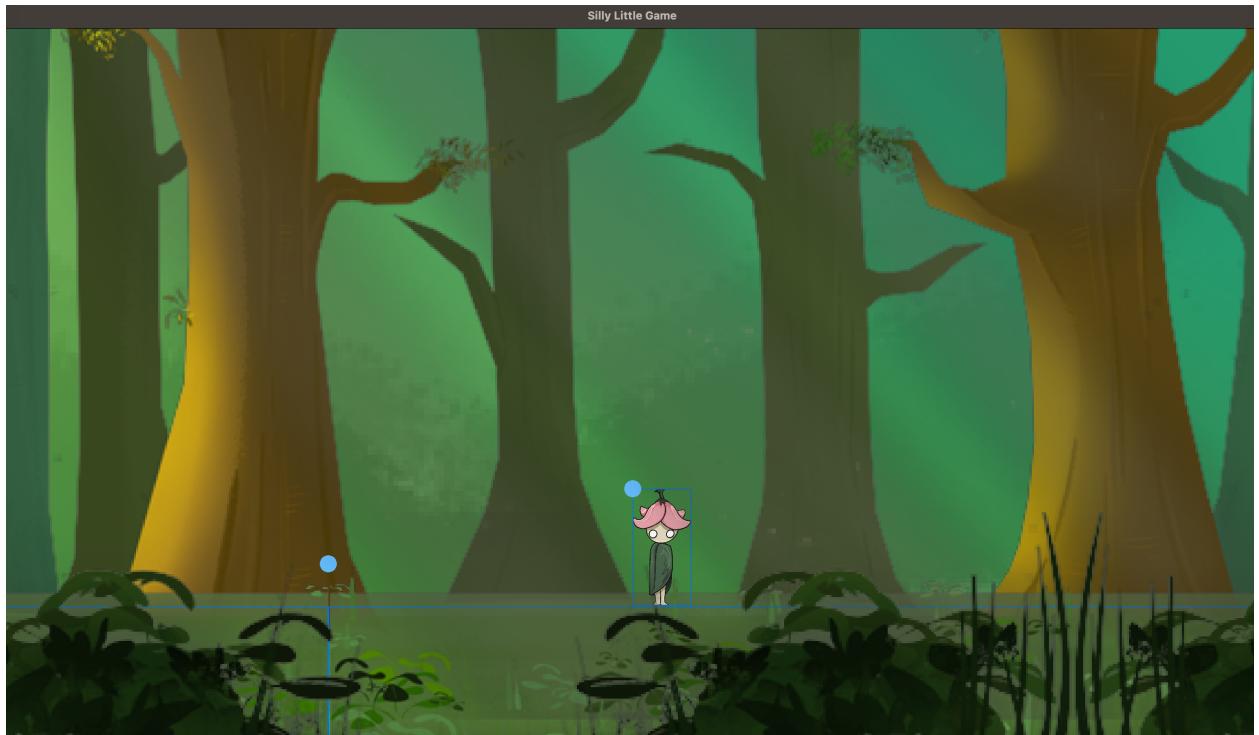
```

- Used Photoshop to measure the X axis, Y axis, width, and height of the different background elements



Final Progress

- Added 5 new classes: Lighting, Trees, Trees2, ColorBackground, Bushes
- Helped put together the background, had to make a few changes as it did not render onto other peoples screens
- For Loop: Add in already written objects in the loop, change position of the elements making them mirror each other for the aesthetics
- Chris was a great help in the process, teaching me how loops could be good to use for the process of mirroring objects. After this was figured out, ended up successfully creating multiple loops on my own! It was hard at first as there was a lot of trial and error, but worth it in the end! 😊
- Took out Trees2 - vines were not connecting and background looked better without them
- Player could now see the duplicated backgrounds! ⭐



Old Codes (Before loop)

- AddObject(new Trees2(new Vector2(-113, 0)), 1);
- AddObject(new Trees(new Vector2(2, 5)), 1);
- AddObject(new Ground(new Vector2(0, SCREEN_HEIGHT * 0.8f)), 1);
- AddObject(new Lighting(new Vector2(10, 0)), 1);
- AddObject(new Bushes(new Vector2(30, 615)), 1);