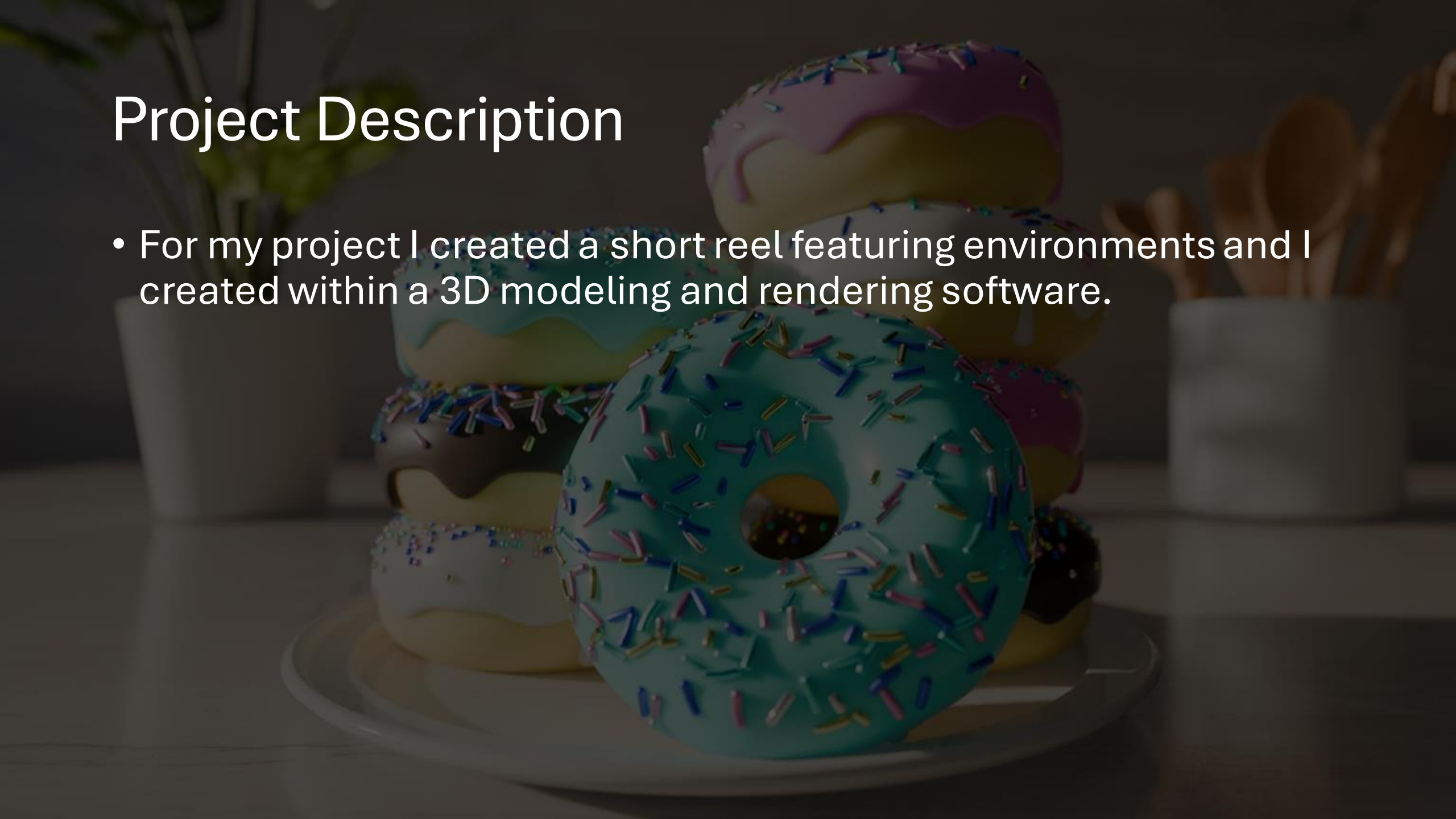
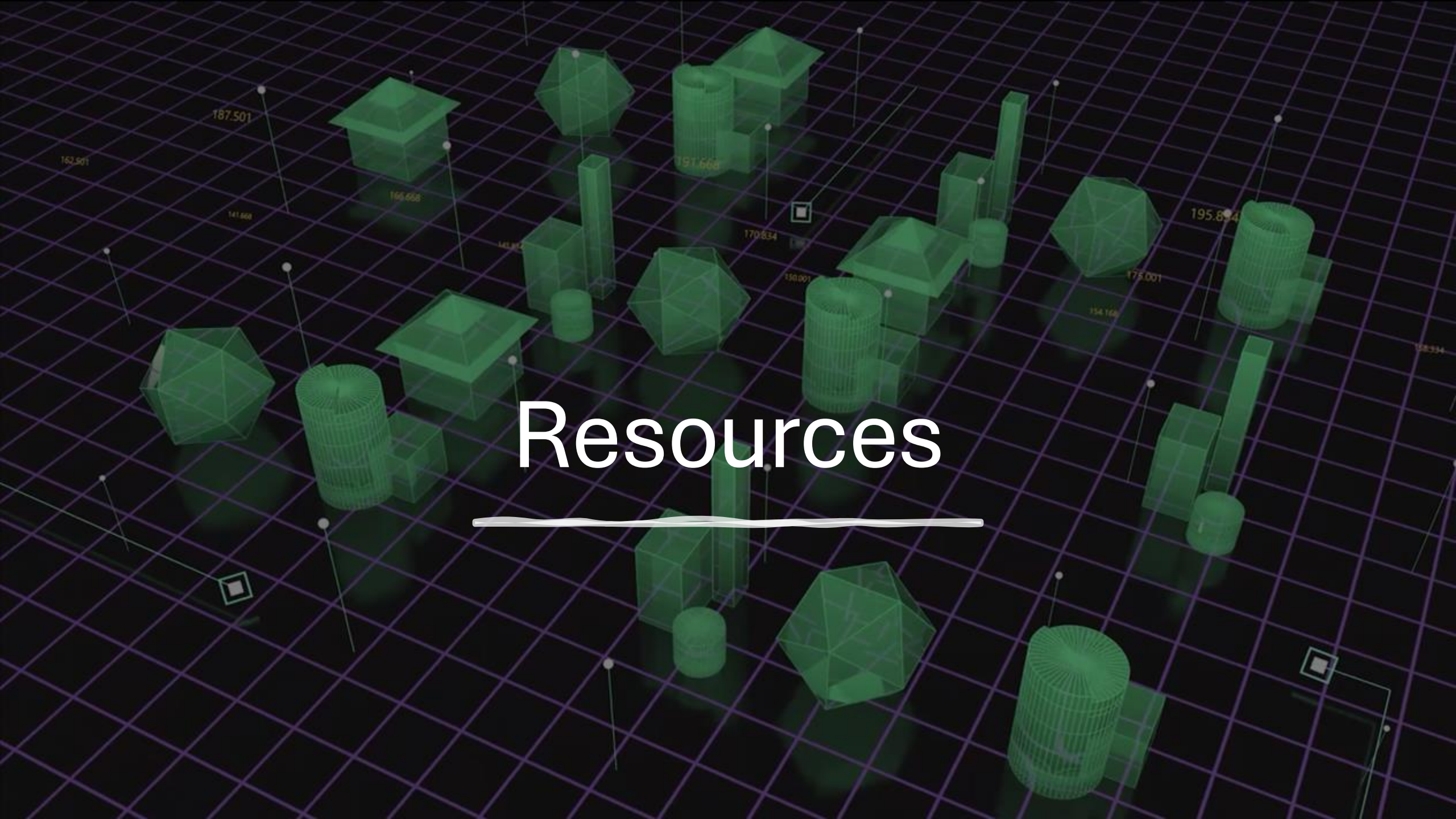
Demo Reel: 3D Environments

By: Keyon Gray

Project Description

- For my project I created a short reel featuring environments and I created within a 3D modeling and rendering software.





Resources

Hardware

Hard Drive

(Already Owned)

HP Pavilion
laptop

(Already Owned)

Logitech Ergo M575
Wireless Trackball mouse

(Already Owned)

Software

Blender

(Free)

Adobe Premiere Pro

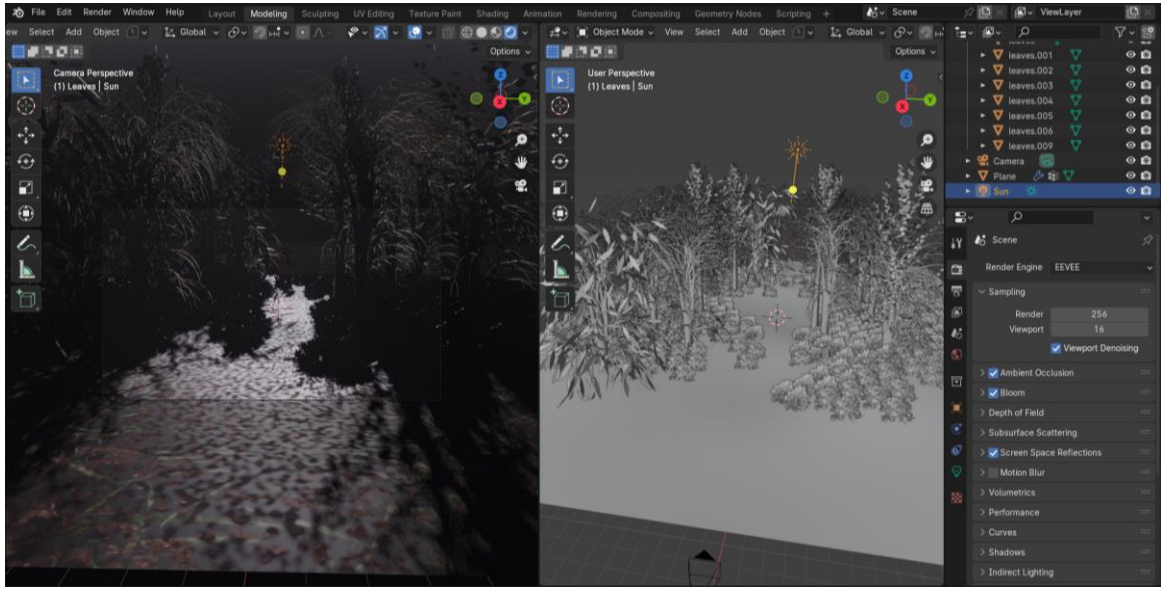
(Provide by School)

Adobe After Effects

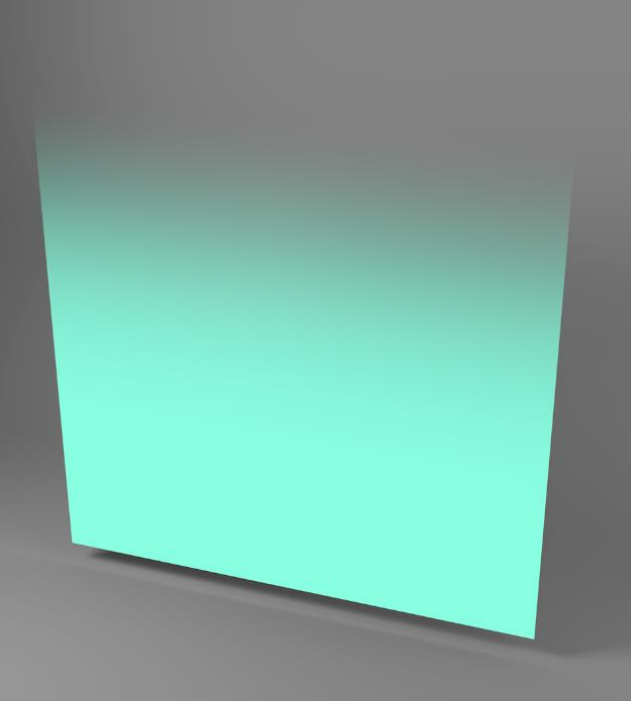
(Provide by School)

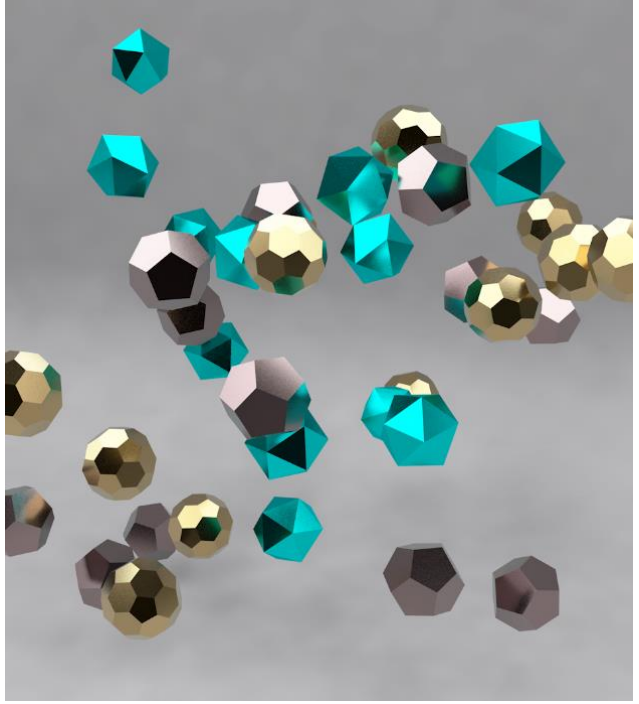
Development

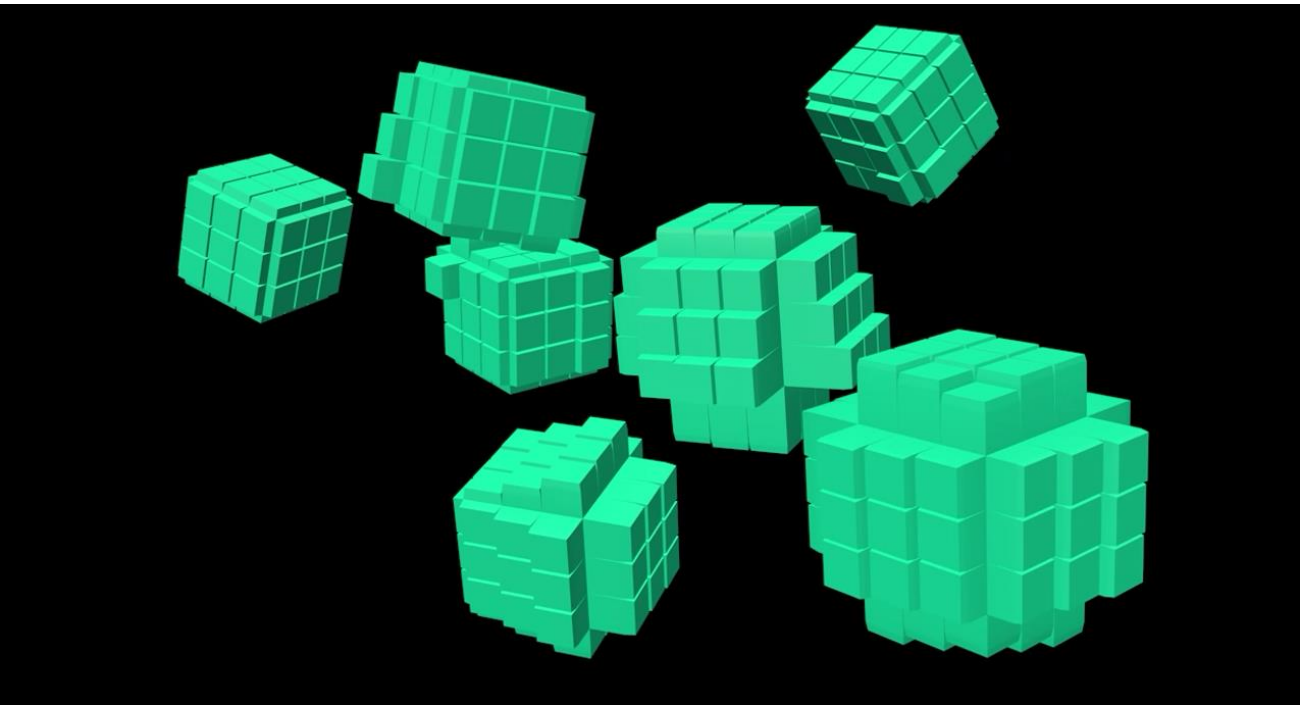
First Step



- I was inspired to create a demo reel by the constant evolution of graphics and aesthetics in gaming.
- Wanted to convey some emotion to the player through 3D modeling.
- At first, I just wanted to create a bunch of things and put it inside a reel.







February Progress Report 1

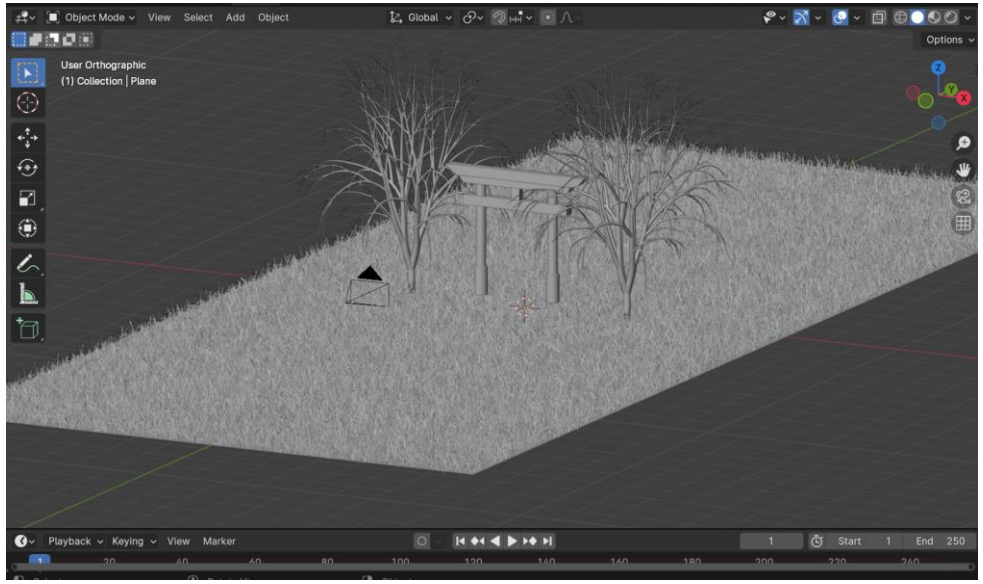
Feedback I received:

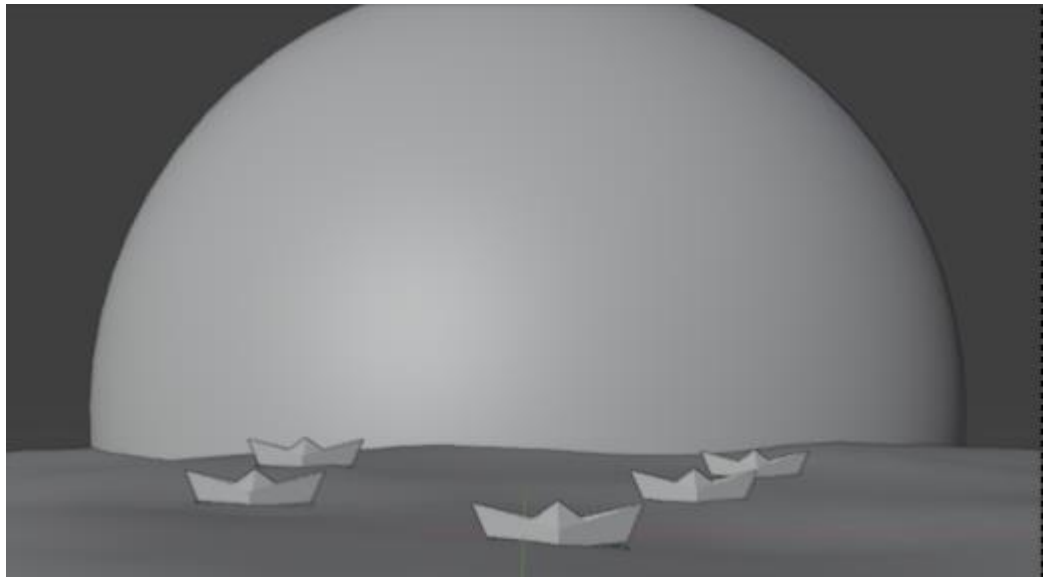
- Lack of focus on a subject
- Demo reel need music
- Needed more renders
- Needed credit

After receiving those feedbacks, I had to think of a way to pivot from a collage of random renders to a reel with more structure.

Advisement

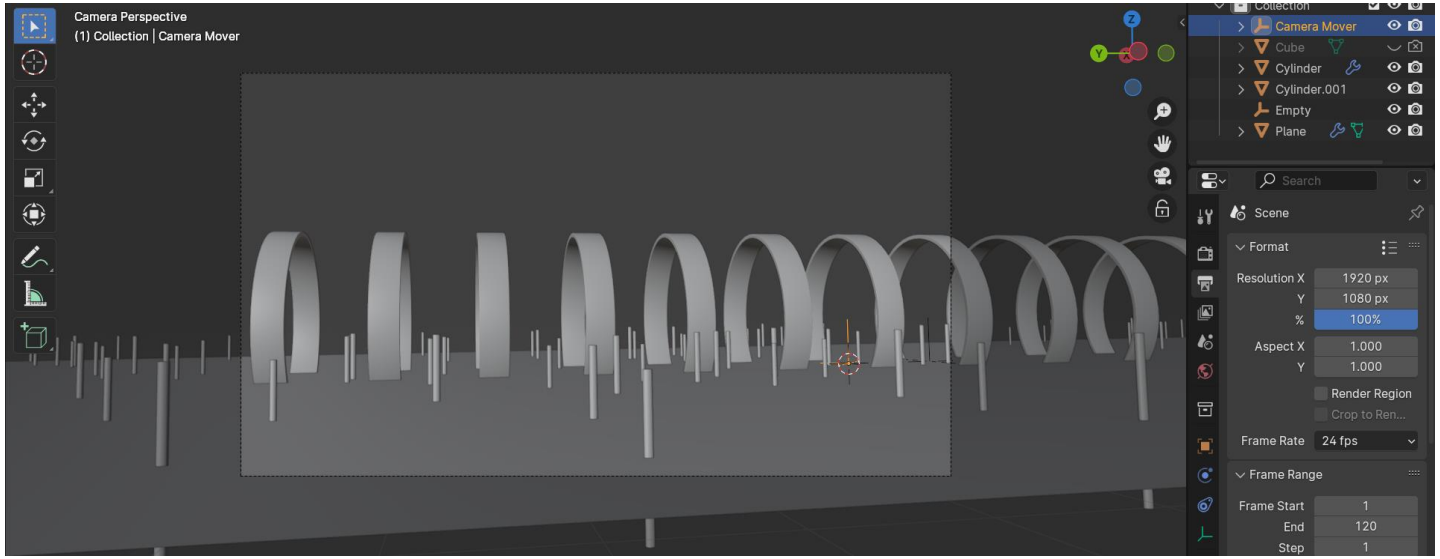
- After discussing with my advisor about what was wrong with my initial attempt at a demo reel, I made a few adjustments to improve the reel.
  - I focus on conveying emotion and feeling through environments.
  - I need to create a sort of transition between the scenes

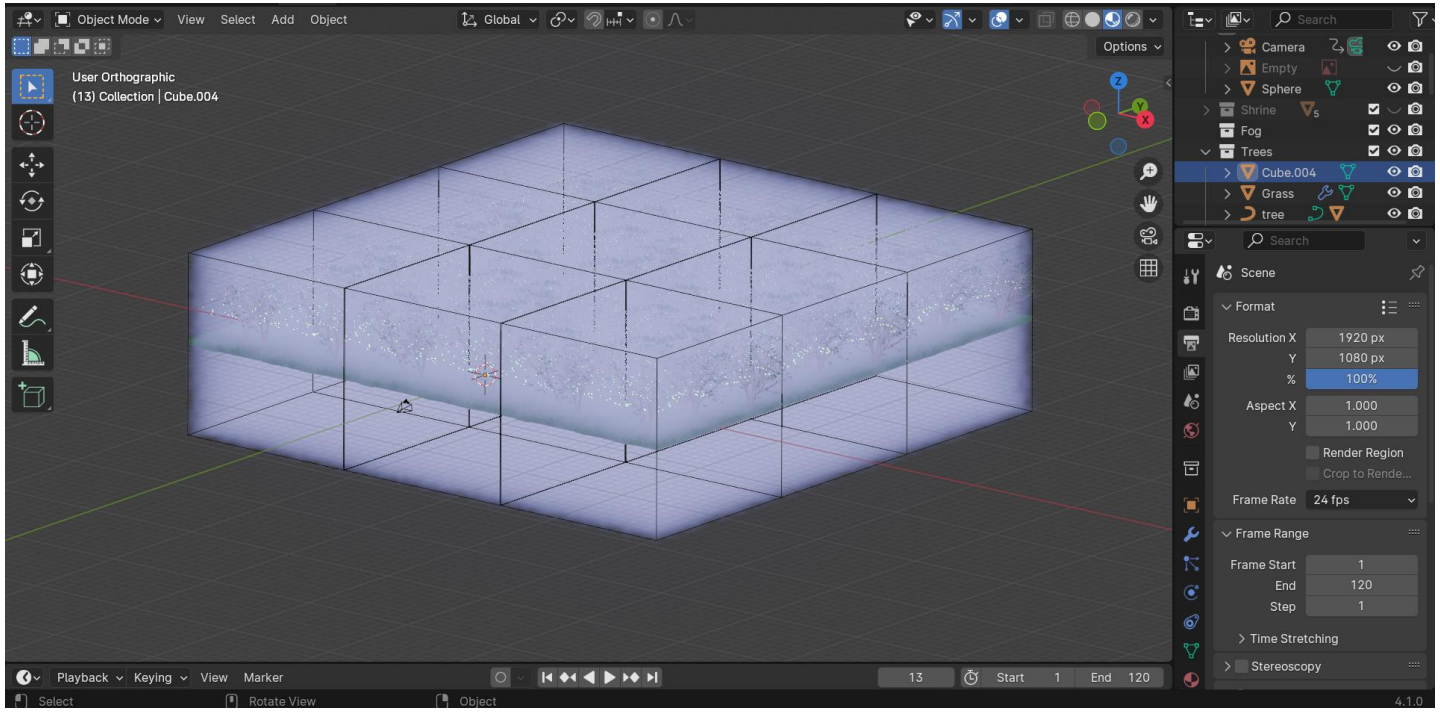




April Progress Report 2

- After receiving feed back from the first report and getting advisement I made a lot of adjustments to my project.





Poster

3D Environment Demo Reel

Keyon Gray – 3D Environmental Artist

Department of Entertainment Technology

Introduction:

The project that I plan on working on is a demo reel showcasing my skill in 3D modeling and my ability to create a scene and props. The project will be a short video being at most 1 minute and 30 seconds. I plan on showing different environments and level design that I have created and show off props and objects I make.

The skills include:

1. 3D modeling
2. Video Editing

The Process / Method:

The general timeline of this project will take about 13 weeks. I will be working on this project at home and at school. Because the project will be a short reel of smaller projects I will be working on a different project each week. I plan to have about 5 scenes in the demo reel. I will use Blender for modeling, texturing and lighting. Adobe After Effects for compositing and Adobe Animate to edit the reel.

Materials / Methods:

Equipment

1. **Laptop (Personal)**
2. **Hard drive (Personal)**

Software

1. **Blender (Free)**
2. **Adobe Premiere Pro (Provide by school)**
3. **Adobe Animate (Provide by School)**

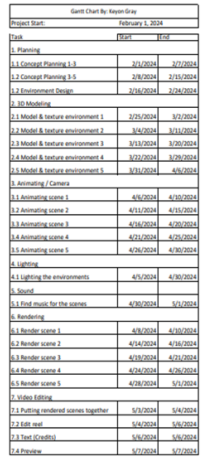
Acknowledgement:

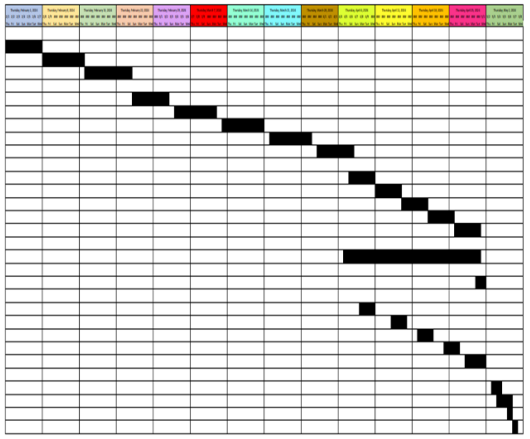
- **Professor David Smith (Advisor)**
- **Professor Ryoya Terao**
- **Professor Saad Farooqi**
- **Professor Hosni Auji**
- **Professor Carlos Viera**
- **Professor Nikki D'Agostino**
- **New York City College of Technology**

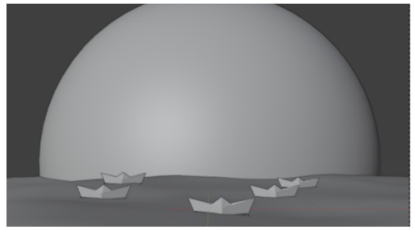
Staff and Students

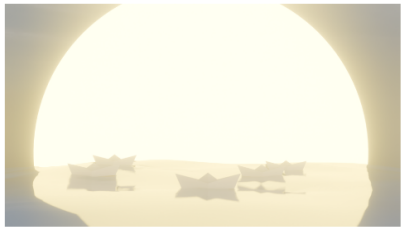
Work Breakdown:

1. Planning
   a. Concept
   b. Environmental Design
2. 3D Modeling
   a. 3D model and texture the environment
3. Animating
   a. Animate the scenes from the storyboard
4. Lighting
   a. Properly light the scenes in the software
5. Sound Design
   a. Get appropriate sounds for reel
7. Rendering
   a. Rendering each scene
8. Video Editing
   a. Putting each rendered scene together
   b. Adding sound effects
   c. Adding credits
   d. Review reel









Results:

Have a short demo reel that will showcase my ability to create objects and build a scene in a 3D software.

Conclusion:

What I would hope to achieve after this project is a stronger understanding of how-to 3D model. Skills that I hope to gain by the end of this project are modeling, level design and time-management. I hope that by the end of this project and after people see the demo reel, that they will be interested in the things I made.

My findings will affect what I must focus on when I am working on another project because I will understand what parts I struggled on the most. Because of these findings, I will have to practice more on the parts that I struggled on. The experience will change how I do things later because I will have a better understanding of what goes into creating and designing levels and props.

Challenges and How I Overcame Them

Demo Reel

- https://drive.google.com/file/d/10XdvJWyMWrGI-1E5Pvl6Pny_e5XKERR1/view?usp=sharing

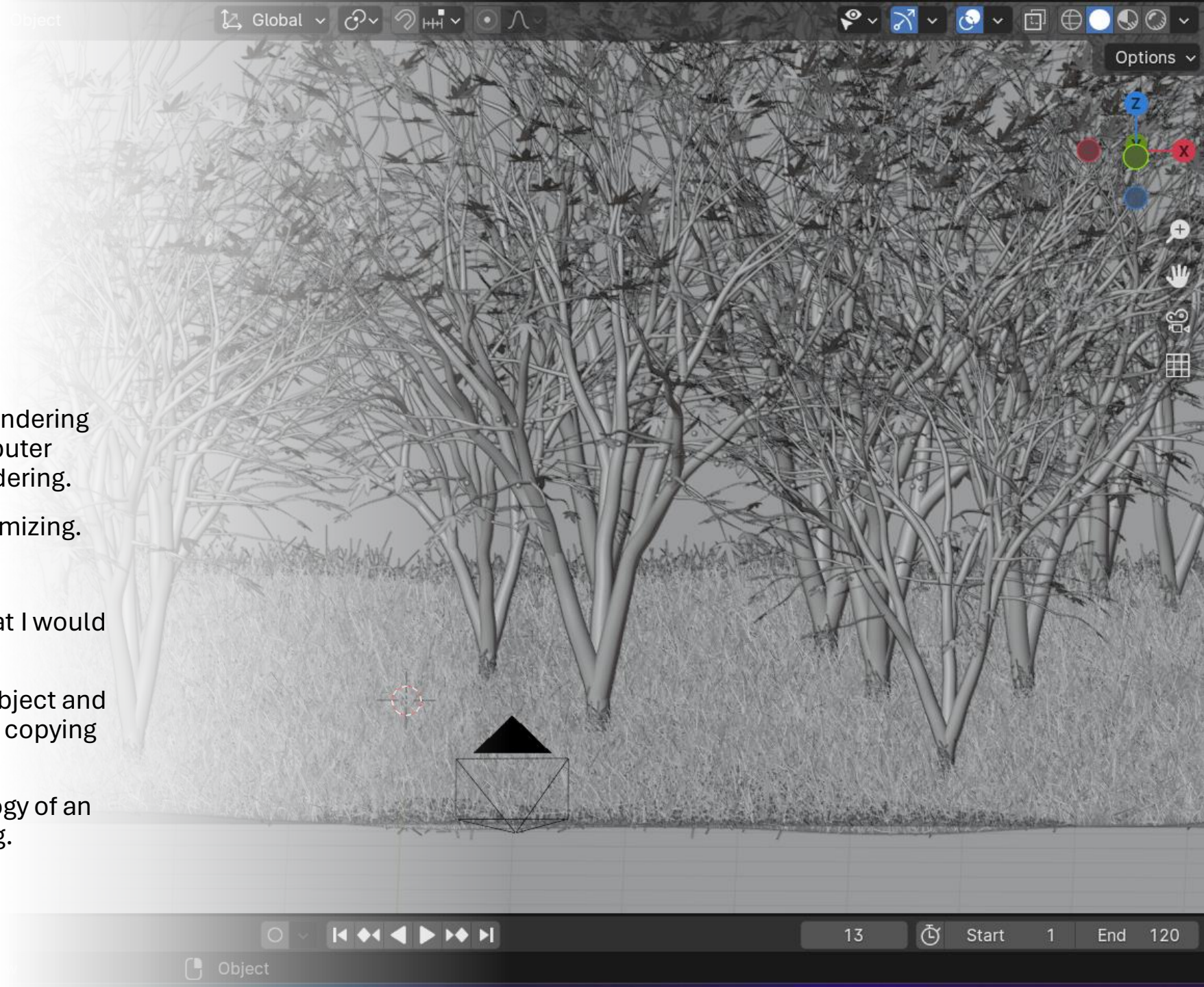
Optimizing

Problem

- One challenge that I had when rendering all the scenes was that my computer would crash in the middle of rendering.
- This was caused by a lack of optimizing.

Solution

- I created instances of objects that I would use over again.
- What this did was duplicate an object and use data from another instead of copying the same data over again.
- By lowering the amount of topology of an object, it also help with rendering.



Lighting

Problem

- Setting up lights in a 3D software can get tricky because if they are not set up correctly and given the proper setting, it can ruin a scene.
- The lighting also didn’t add much to the scene and felt plane

Solution

- Luminating some scenes with color to add depth and complexity.
- Adding lights to certain objects to create reflection

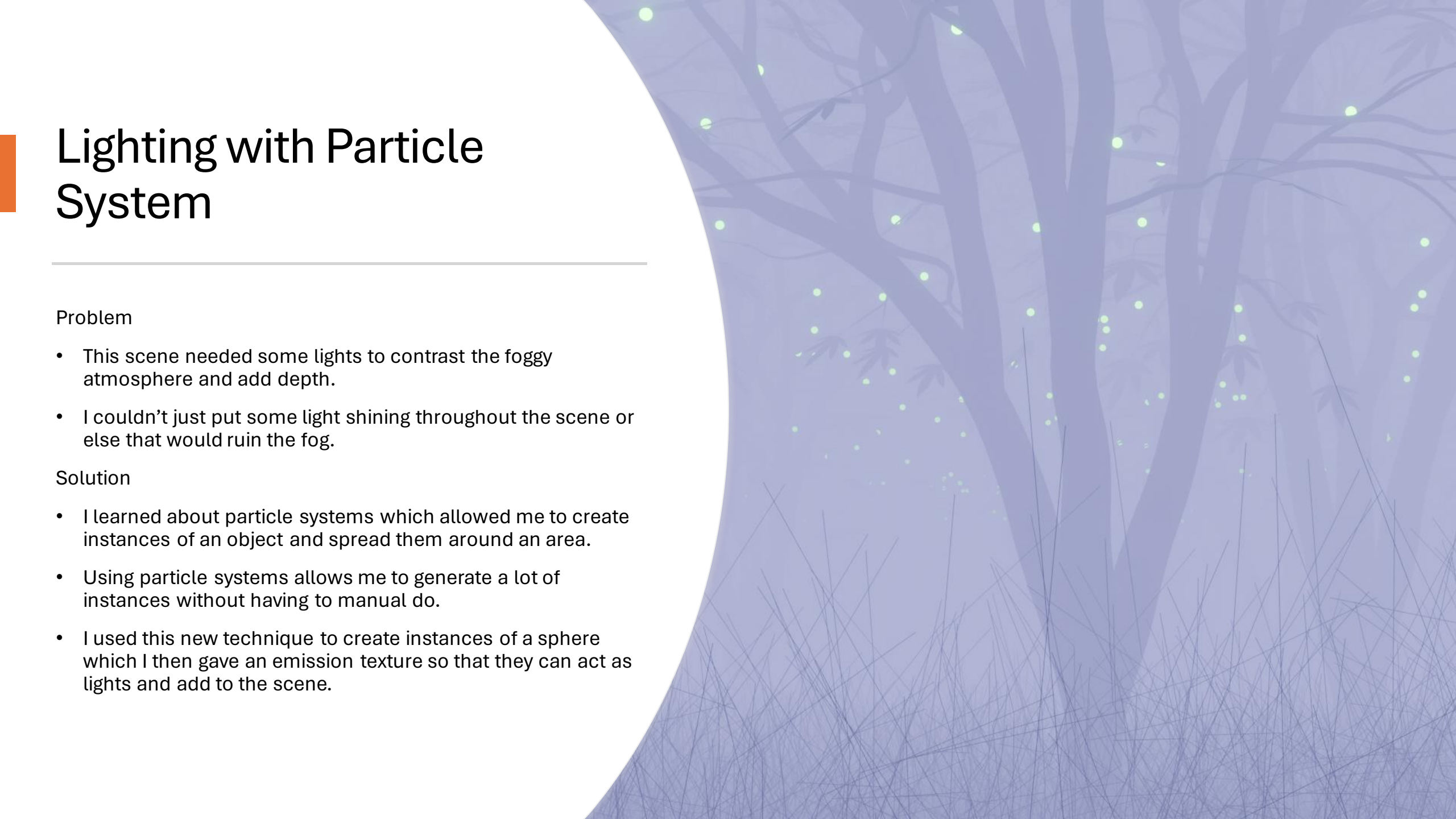
Lighting with Particle System

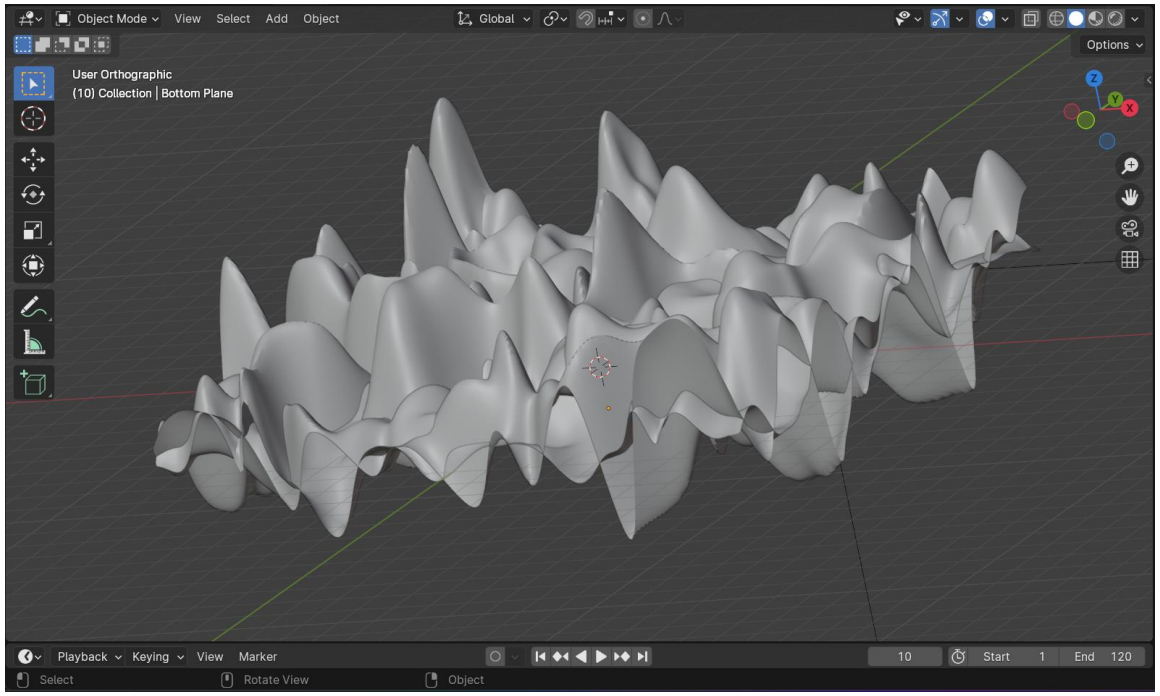
Problem

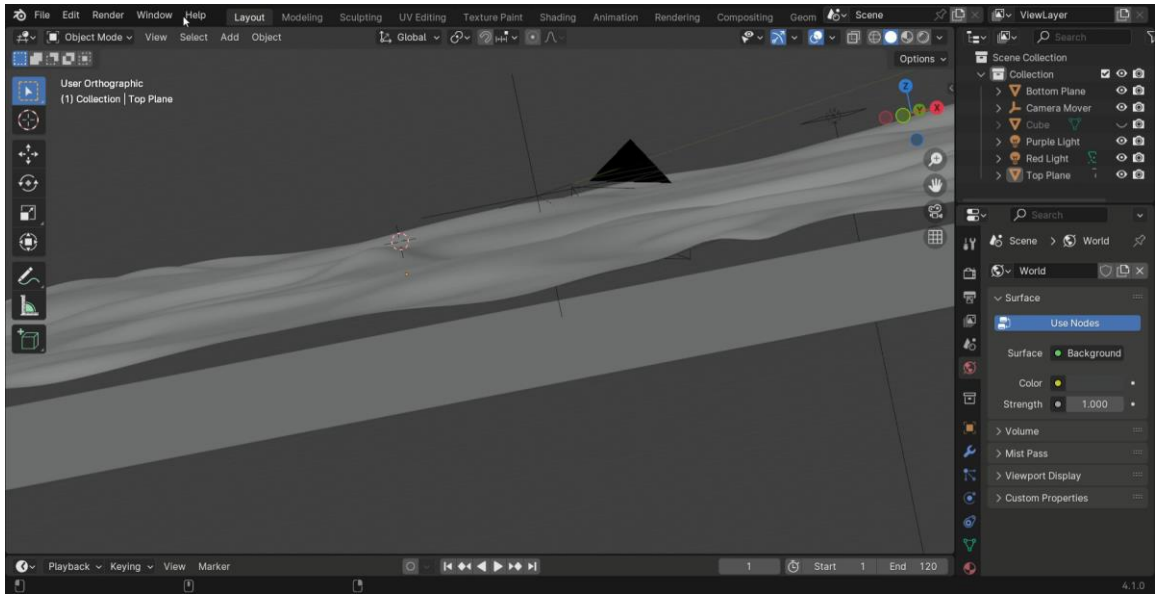
- This scene needed some lights to contrast the foggy atmosphere and add depth.
- I couldn’t just put some light shining throughout the scene or else that would ruin the fog.

Solution

- I learned about particle systems which allowed me to create instances of an object and spread them around an area.
- Using particle systems allows me to generate a lot of instances without having to manual do.
- I used this new technique to create instances of a sphere which I then gave an emission texture so that they can act as lights and add to the scene.







Animation

Problem

- Some animations would break the model and mess up the scene. This was happening because I was physically altering the shape with my mouse.

Solution

- Using modifiers and altering the numbers themselves rather than the model allowed me to animated the shape easier and without breaking them often.

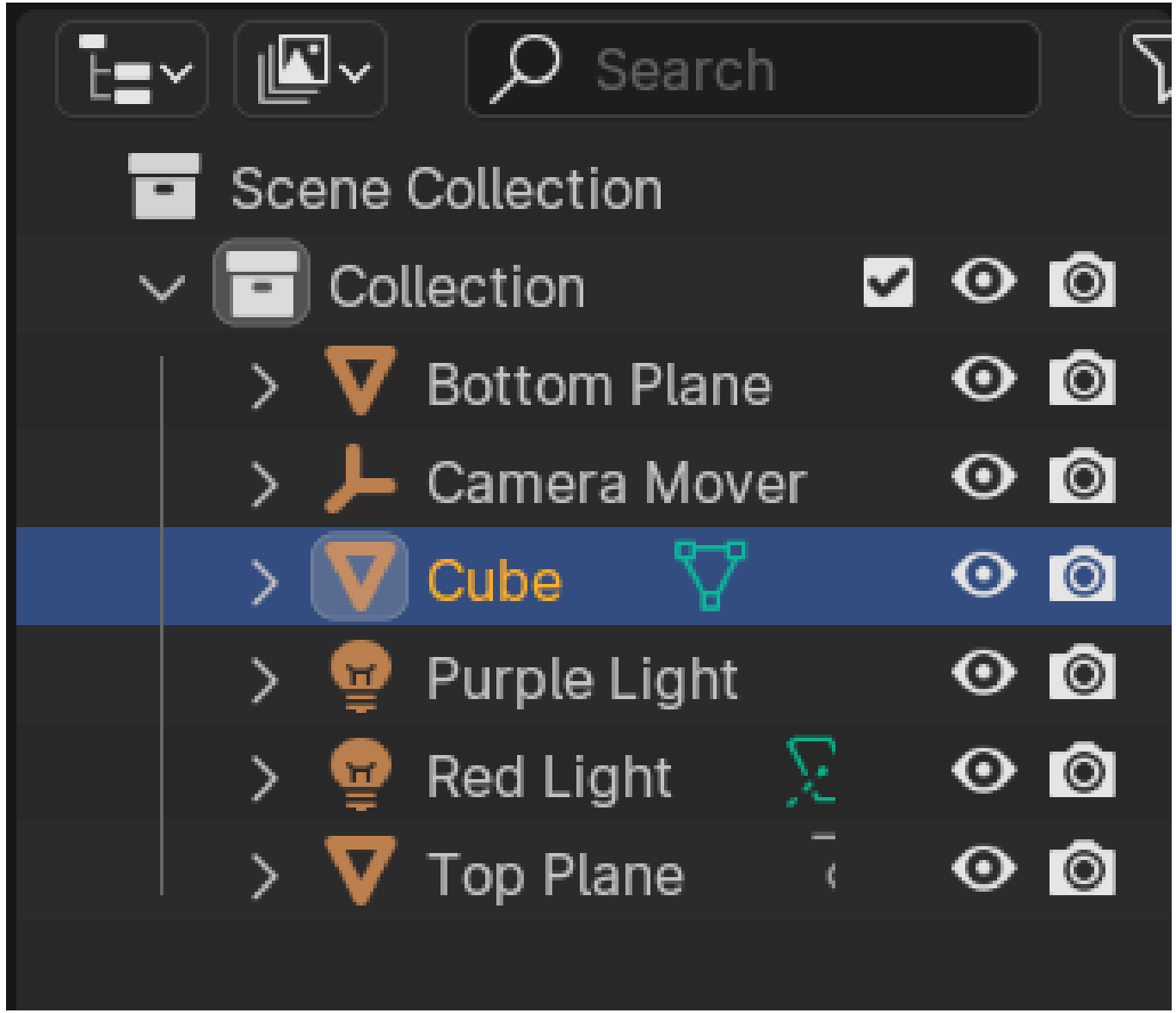
Camera Animation

Problem

- I couldn't animate the camera within the 3D environment using key frames.

Solution

- I parent the camera to an empty object and animated the empty object which as a result animate the camera moving.



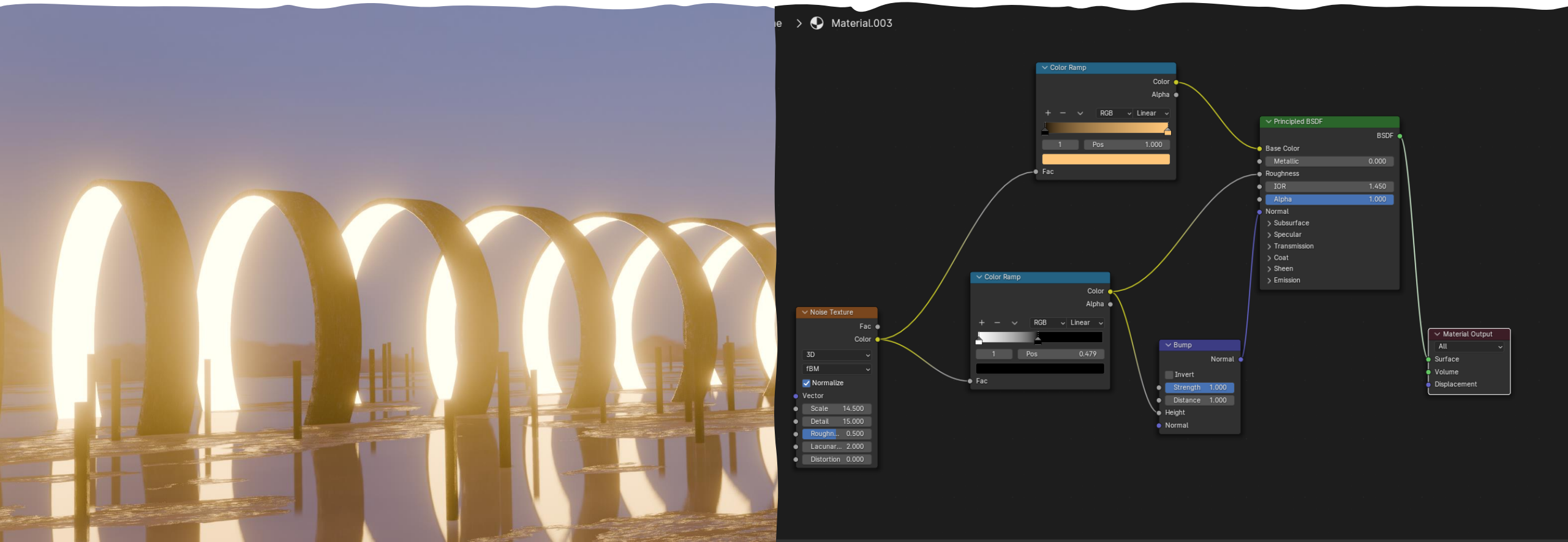
Texturing

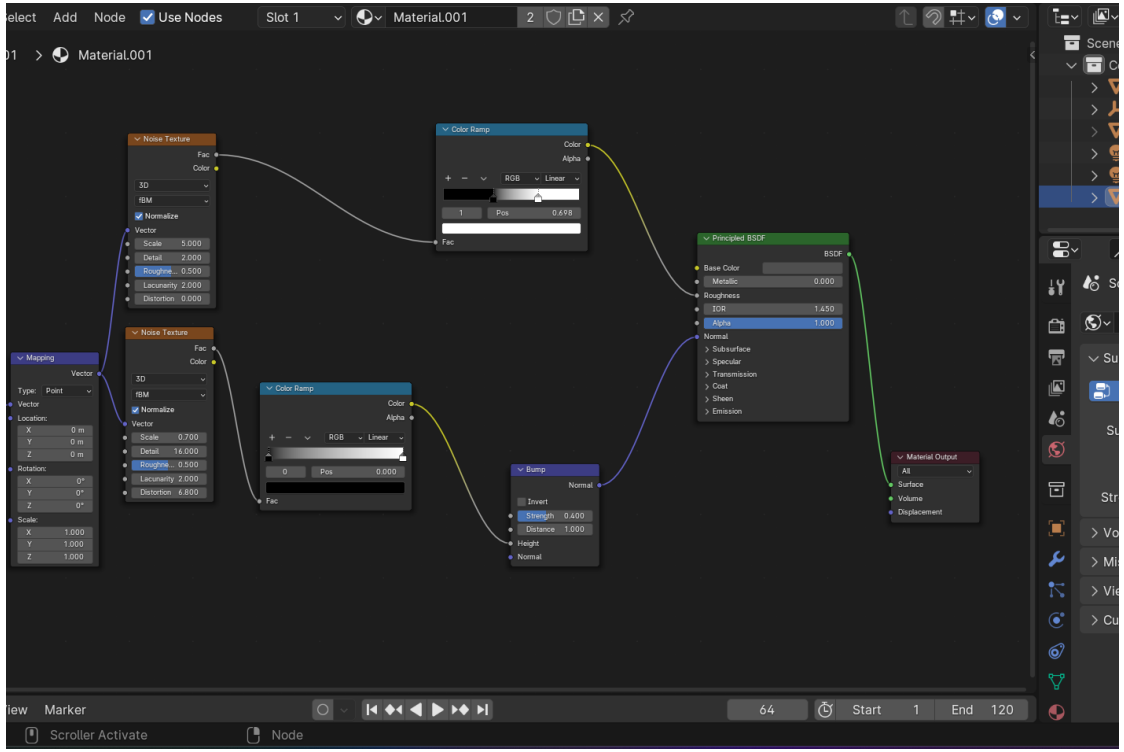
Problem

- I was having trouble creating complex textures and also special effects to the scenes.

Solution

- I used what is called a node system to create textures.
- Using nodes allowed me to add multiple texture on top of each other and add randomness to how they are distributed among the object.




Add
Node
Use Nodes
Slot 1
Material.001
Material.001
Noise Texture
Color Ramp
Principled BSDF
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Noise Texture
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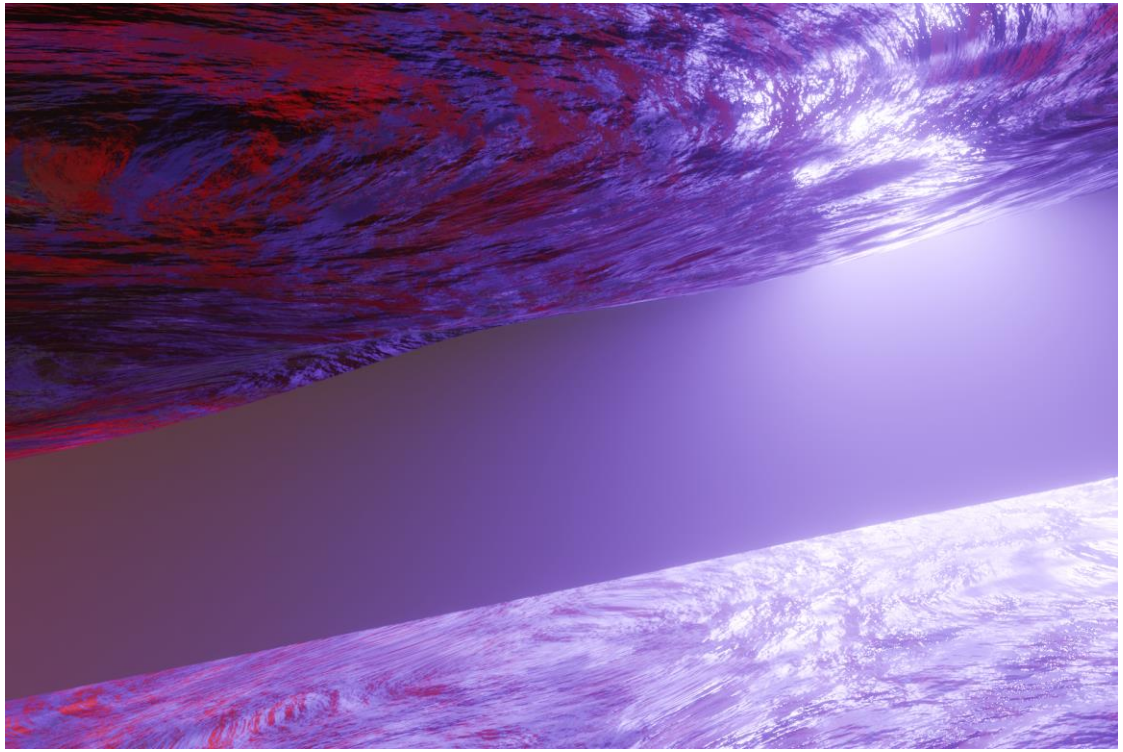
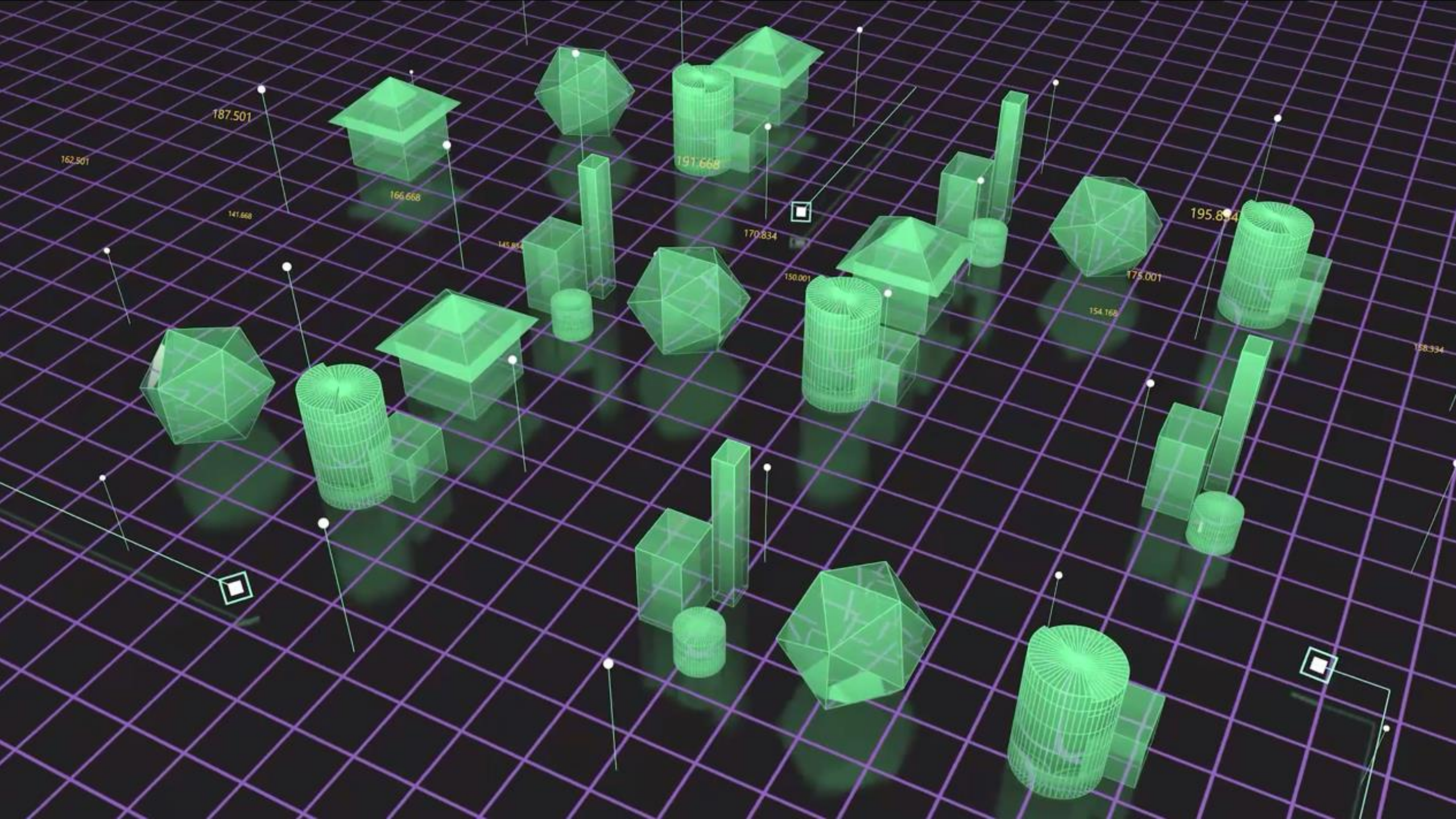
Bump
Material Output
Marker
64
Start 1
End 120
Scroller Activate
Node



What I learned

I learned a lot of new skills and concepts about 3D modeling.

- Texturing
- Lighting
- Composition
- Animation
- Particle Systems
- Modeling
- Nodes
- Optimizing
- Modifiers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