

Fractal Forest

Final Group Project

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Link to GitHub Repository and Instructions

<https://github.com/jessalbarian/FractalForest>

Instructions

- Go to the FractalForest folder
- Go to the Scene folder
- Open the FractalForest.unity scene

Using our Project

To use our scene properly, you must use an HTC Vive or headset that has controllers.

You can do the following in our scene:

- Teleport (move around the scene) by using the trackpad on the controller
- Hold down the trigger on the controller when you want to touch a mushroom with moving particles. You should hear music and see the mushroom change into a fractal design

First In Class Presentation Slides

<https://docs.google.com/a/colorado.edu/presentation/d/1taaD4CpVCd43Jsc6gzwVDjGB7ucBjnOSS0PLdI872Nw/edit?usp=sharing>

Second In Class Presentation Slides

https://docs.google.com/presentation/d/1XW3LUkBHyY2RvAg1mFxpOE_qYuPGP2p3N_IdcOb9VBk/edit?usp=sharing

Link to Video Walkthrough

<https://youtu.be/bWvqluepih4>

Screenshots





Report

Look back over your initial planning document - did you achieve your "minimal necessary for success"?

Looking back on our initial planning document, we did achieve all of our necessary requirements for success. We were successfully able to create a beautiful forest scene, enable user interactions with the environment to allow the user to teleport, play music when they touch a mushroom, and show fractal designs. 100% of our project requirements were accomplished! We even added being able to move around the scene from our computer, without using an HTC Vive or other VR headset, so the user can see the forest. Teleportation was not what we had planned, but we knew we had to move around the scene somehow, so that was our solution.

What were some unexpected challenges that arose?

Some unexpected challenges that arose were using GitHub as our version control system. We had a lot of big files to put into our project, such as .wav files, and we were having trouble uploading them to GitHub. Our fix to this was using Git's Large File Storage setup which worked for us. Another issue we had was that the versions of Unity in the VR lab on campus were not updated. This caused issues in the beginning phase of our project. Another issue we ran into was merge conflicts throughout the project. Even when we thought we wouldn't have a merge conflict, we somehow would run into one. A final issue was working with Unity between everyone's branches. Github would throw merge conflicts with your individual branch even if your branch was updated, generally this was a git cache issue. Thankfully we had people on our team who could fix them.

Are you happy/satisfied with your project?

Overall, we are satisfied with our project because we met ALL of our goals and even added some more. We were able to design a beautiful forest scene, we enabled user touch and user teleportation, and we are able to play music when touching certain objects, and the mushrooms you touch turn into fractal designs. We all learned a lot about Unity in general during the course of the project, and we are happy that we completed the task in such a short period of time.

What would you add if you had more time? Did you add anything post-expo?

We thought it would be really neat to have added something to the skybox, such as moving fractal designs. We wouldn't want them to be really intense, fast moving fractals, but subtle ones that make the scene look good and calming to the user. Another added component could be to add the option for the user to choose different genres for the music they're adding; it could be anything from chillwave electronic to meditative binaural beats. We would like to add several different types of fractal-like shaders to different objects when touched. We found a lot of great shaders in GLSL. Making an algorithm to convert GLSL to HLSL would be extremely useful for us.

Any other thoughts on your project?

Overall we are all very happy with how the project turned out. We accomplished all the goals we set out to do, and created a successful interactive game.

Please credit any outside assets you used in your project.

[Nature Starter Kit 2](#)

We used this for the trees and bushes objects, the grass and dirt for the terrain we created, and the skybox.

[Toon Forest](#)

We used this for the flowers, mushrooms, grass, and tree stump objects.

[Kenney - Animal Pack](#)

We used this for creating the fractal designs on the mushrooms, and we even donated money for the artist for being able to use his designs.