

*DIGITAL
PEDAGOGY AND
THE POWER OF
UNITY*

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OVERVIEW

Unity is a game development environment developed in 2005 to help ease the financial burden of indie developers and enthusiasts. The engine can create games with two-dimensional, three-dimensional, virtual reality, and augmented reality games, among other genres. Unity is an excellent tool for digital pedagogy i.e., teaching students and expanding the way that people can learn through digital media. What I wanted to pursue with this particular project was understanding how we could build virtual worlds through storytelling and how interacting with that world could be utilized to teach students.

PROJECT DESCRIPTION

For this project, I wanted to create a three-dimensional fantasy setting that functioned similarly to a virtual map of the world. The surface of the map would have notable areas such as structures and cities that the user could click-on and open an informational panel with a detailed history of the objects. These panels would have a rotating three-dimensional model of the object they clicked on that the user can rotate with their mouse cursor with the informational group on the opposite side of the screen. The user would pan the world between objects and mostly learn about them in a virtual museum environment, which would teach them about the overall story.

Audience:

The intended audience is people interested in virtual museums and those who play Dungeons & Dragons. I wanted to create an environment where dungeon masters could save their world and save the journeys that their players have taken as a sort of memento.

Additionally, I wanted to initially create a framework to be a template for anyone interested in

preserving these worlds. The current working version is now more suited to individuals who are into puzzle adventure games set in a fantasy setting.

Purpose:

You could imagine this project to be akin to a sort of virtual museum. One where you can click on objects throughout the world and read about its history, mostly learning about the world through context. Recreating our world in a few months and showcasing what we have done is challenging, so I decided that I could benefit from creating my unique world. The creation of my world began with three central pillars: what is the mythology, what is the geography, and what is the culture. It would have been easy to copy a current pantheon. Still, I feel that a mythos and the world it inhabits, are too closely linked to paste modern societies into my world simply.

Background Information:

Thus, I created a pantheon of thirty-seven deities to serve as the basis of my cultures, governments, and relics; chief god among creation was Liro, the god of destiny. I wanted to center my worlds' beliefs around the idea of destiny being the center of everything. Liro created the elements in four domains: Air, Water, Fire, & Earth, and each domain shares two chief deities that are patrons of several subdomains. For example, Urasil and Ykrena are both patrons of Fire, funneling their own beliefs into how they interpret fire. Urasil is known for the Sun, Victory, and Summer, while Ykrena is known for War, Sacrifice, and Blacksmithing. Each has a hint of fire, heat, or other association that connects them to these subdomains.

Kingdom of Jewls, The Chivarian Swamp, and The Shadow Grounds. Each area is representative of their ideals and morals. For example, if a soul is in the Scarlett Fields, they must endure being murdered repetitiously, a punishment reserved for souls found guilty of murder when crossing over into the afterlife. A triumvirate of leaders rule the Ashen Lands: Abadonia, Satyn, and Lilytha, each inspired by a different demon in Christian Mythology and then altered to fit my mythology. Each layer of the Ashen Lands serves a specific lesser deity associated with sins related to those planes.

Above the mortal plane, in opposition to the Ashen Lands, is the Astral Sanctuary, a realm of eternal bliss. It is divided similarly to the Ashen Lands. There are four realms overseen by a specific lesser deity who serves under a triumvirate of leaders also loosely based on Christian mythology. Each of the areas in the Astral Sanctuary takes its design from different real-world cultures that are familiar. For example, The Jade Planes take their design from East Asian cultures, The Grand Garden from Northern European cultures, The Elysian Meadows from Mediterranean cultures, and the Immortal Oasis from Middle Eastern and African cultures.

After I finished with a primary pantheon, I then proceed to create and draft my geography. For this project, I wanted to focus on a single continent called Eldrin and explore the cultures that inhabit each area of this world. I created the landmass in Photoshop, drawing the foundation, and then using techniques I learned over the years to produce a landmass with an atlas appearance. Once the landmass was complete, I subdivided the continent up into countries based on geographical landmarks such as mountains and rivers.

Each country derives its title from a bastardized version of each elemental deity's name. I wanted their personalities to be reminiscent of the beliefs that each god held. Votarung, for example, is named after the water god Votarr. This country has one of the best navies on the

continent, and most of their bigger cities sit on the coast or large rivers. They are at war with their northern neighbor, yearning for more land, and possess one of the most extensive groves of wine production in the world, and they are second to none in fishing. Most of the cults or other “villains” are nautical or based around water in some way. For example, the main antagonist of my story is a cult called the Nyne, who resides on an island shaped like a nine off the coast of Votarung.

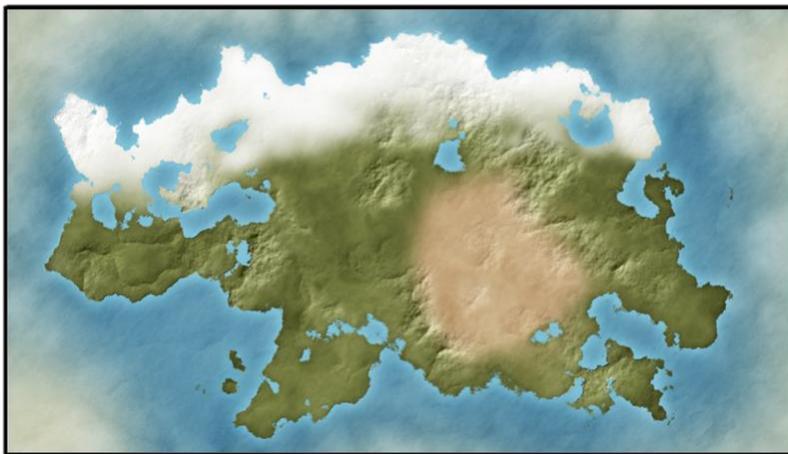


Figure. 2 – World Map



Figure. 3 – World Map w/ Names

Progress:

The first few demos that I produced for the project were lacking story and depth. I had a single model on the landmass that, when interacted with, opened a new scene with a rotating model and an information panel. It was bland and flavorless and needed to have something to draw in the user. As my project progressed, I realized that I needed to get more specific with the location and the story. I decided that I wanted to focus on this cult known as the Nyne and tested out several areas for their origins.

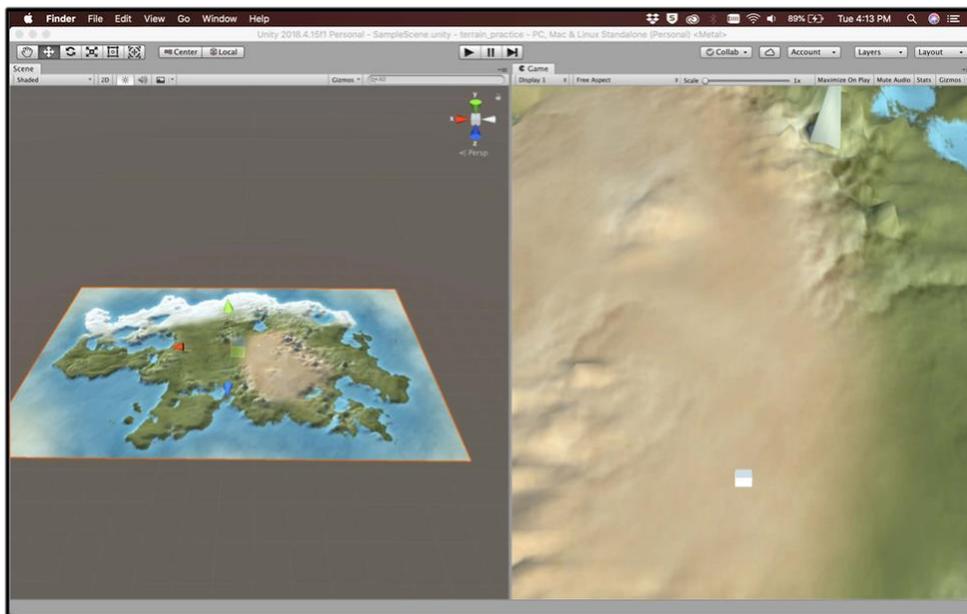


Figure. 4 – Demo #1

The first location was a desert that I called Rinva's Waste. Features of my final project were built during this time, such as camera switching, labeling the areas, and having multiple areas to explore. Each object in this demo would take you to a different scene that had information about those areas when clicked on. However, I still lacked a clear beginning, middle,

and end to the story. Thus, I switched my land to an isolated location called the Druid Isles and began to tell the story of the Great Betrayal.

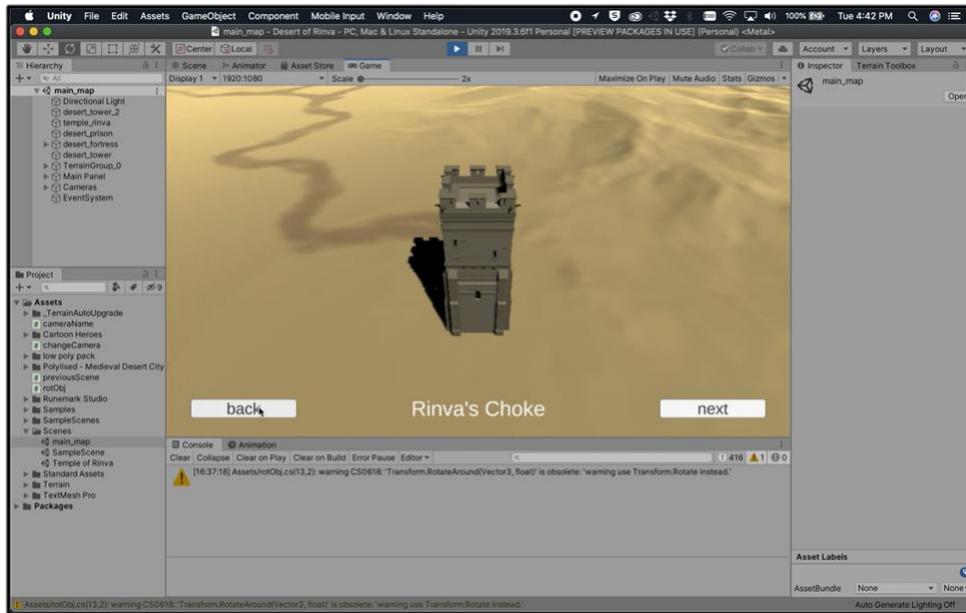


Figure. 5 – Rinva's Waste

The Great Betrayal was the idea that a group of ancient druid clans ruled a set of isles off the coast of Votarung, known to the Votarri as the Eastern Isles. It was too far in the sea for many countries to claim, and many pirates and other sea marauders were not able to sustain being that far away from trade routes. The Druid Isles were peaceful, but they had a powerful tool that a specific cult that worshiped the goddess of death, Rinva, couldn't resist capturing. This led to the story of the Great Betrayal that I wanted to tell through an interactive puzzle adventure game.

I was able to finally formulate the best tools to implement to succeed in telling the story I wanted to share. Each puzzle was supposed to be challenging so that when you completed it, you were able to get a small piece of the overall story. In total, there are five puzzles to solve, and a

final one that allows the player to learn the fate of the druids on the isles and find out how the cult managed to take control.



Figure. 6 – Early UI

Final Product:

For the final submitted project, I was only able to implement two fully functional puzzles and a system for tracking which puzzles the player completed. Each of the puzzles could be reached by hovering over and selecting one of the many runes. Each rune theoretically takes you to a different puzzle. Still, since I only have two working puzzles, I have two working runes. When you complete a puzzle, the rune will glow green, indicating that you have completed it. I still need to make the puzzle runes more visible, but I think that it is a sound system thus far.

After I completed the most recent version of my project, I tested it with friends on different operating systems. It seemed to work well, and they had positive feedback about the design, such as new buttons for each of the puzzles that could enhance the experience of the game. The input was vital in filling in small gaps that I missed when creating the current version of the product, such as a puzzle exit, a solution view, and menu buttons.

Learning Outcomes:

This project was something that I didn't expect to learn as much as I was able to. I learned how to code in C# and utilize a majority of the tools available in Unity's standard version. I learn how to import, and export models created in Maya and Unity and how to develop models that function correctly within the engine. I also learned how to create textures that have alpha channels trying to build a palm tree for one of my iterations of the project. Additionally, I learned how to create a story and how to use elements within my game to enhance and progress that story. I also learned about timekeeping commitments and scheduling myself for a single-person project with specific deadlines.

Future Work:

My next steps for this project are to finish all of the puzzles and functionality of adding in story elements to each of these puzzles so that players can have some fun. I will be adding in aspects of the story through every part of the scene. I will also be updating the UI of the puzzle scenes and adding in an inventory scene for collecting the runes after every puzzle. The end game will be a final puzzle that utilizes the runes so that the player feels like their progress matters.

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