

EE/CprE/SE 491 WEEKLY REPORT 4

10/3 - 10/10

Group number: Team #37 - sdmay25-37

Project title: Non-Euclidean Game

Client: Josh Deaton

Advisor: Dr. Joseph Zambreno

Team Members/Role:

Tasman Grinnell Project Manager/Rendering Engine Engineer

Josh Deaton Rendering Engine Lead

Ben Johnson Rendering Engine Engineer

Cory Roth Rendering Engine & Game Design Engineer

Lincoln Kness Game Design Lead

Zach Rapoza Game Design Engineer

Spencer Thiele Game Design Engineer

- **Weekly Summary:** The Rendering Engine team continued to learn OpenGL with more advanced use of vertex buffers and animations. Ben began to create the shell of an Entity-Component-System for managing resources for the game. The Game Design Team began to create mockups using Unity as a demo for the presentation purposes. Additionally, Spencer created tutorials and helped to provide resources for the other engineers to use for learning purposes.

- **Past week accomplishments**
 - Tasman: Began to look into generating and rendering new triangles randomly throughout the screen. Looked into advanced applications of using buffers and arrays. Performed additional research for background for the project.
 - Josh: Continued working on developing OpenGL knowledge by learning different buffering techniques. Researched rotation matrices. Created animation using rotation matrices I developed. Team meetings. Continued research into projection.
 - Ben: Created specialized memory allocators for future engine use. Made a temporary “Sprite” component, and used a system to draw it to the screen.
 - Lincoln: Started to make a prototype enemy in unity, This will just be a basic enemy that has a “fear” of light, as well as looking into basic enemy pathing.
 - Cory: Ran through unity guides to learn about how to use software—started a prototype of a light source with it being able to emit light out a certain radius. I began trying to simulate how to render a moving camera in OpenGL.
 - Zach: got movement working with the farmer entity in Unity and handled diagonal speed issues.
 - Spencer: Compiled more tutorials and information on Unity, created some stand-in art for a farming tile-set, built functioning farming simulation (plant, grow over time, harvest), and created initial design concepts for special locations/music/NPCs.

- **Pending issues**
 - Tasman: I have a weird issue that wipes the screen instead of adding the triangles. Once I fix that, I can look into rendering more advanced objects.
 - Josh: Need to figure out how to render a 3D hyperboloid and create a separate projection on the screen
 - Ben: There are a lot of big architectural decisions that need to be made about the engine before I can continue implementation.
 - Lincoln:N/A
 - Cory: OpenGL transformation matrices are somewhat confusing, and I need to look more into that for my understanding.
 - Zach: Get a visualizer for the colliders working
 - Spencer: N/A

- **Individual contributions:**

<u>Name</u>	<u>Hours This Week</u>	<u>Total Cumulative Hours</u>
Tasman	6	25
Josh	6	26
Ben	7	24
Lincoln	6	26
Cory	7	27
Zach	7	21
Spencer	9	28

○ **Plans for the upcoming week**

- Tasman: Fix the pending issue, begin looking into rendering shapes from a sprite sheet.
- Josh: Continue working on projection of 3D surfaces to form our non-Euclidean world
- Ben: Formalize design decisions regarding the engine, and continue implementation.
- Lincoln: Continue working on unity and trying to get more progress on the enemy entity
- Cory:
Continue to develop my light source prototype and have multiple different types of light sources. Continue working on moving the camera and try to add tiles on the ground that generate while the camera is moving.
- Zach: Get the interaction collider working for the farmer and implement the farmer following the mouse for direction.
- Spencer: Get Unity Version Control up and running, add farmer interaction to farming simulation, redo stand-in art to be isometric, finalize Biome concepts, and brainstorm NPC ideas.