

## ***EE/CprE/SE 492 BI-WEEKLY REPORT 11***

***September 15 – September 28***

***Group number: 18***

***Project title: GPGPU Parallelization of Memworld***

***Client &/Advisor: Dr. Wymore***

***Team Members/Role:***

- ***William Blanchard, Parallelization Lead***
- ***Mason DeClercq, Team Lead***
- ***Jay Edwards, Documentation Lead***
- ***Cristofer Medina Lopez, Integration Lead***
- ***Dalton Rederick, Communications Lead***
- ***Collin Reeves, Game Development Lead***

### ○ **Bi-Weekly Summary**

Over these past two weeks, player jumping has been implemented as well as colliding with objects. Objects now update their chunk when they are moving in order for the renderer to know where they are. A bug with ray based lighting was fixed. New assets were created for the starting world (where a player spawns) and for levels in the future. Work on physics, UI, and interoperability is continuing to be implemented.

## ○ Past weeks accomplishments

### • Wil Blanchard:

- Became accustomed to the current state of the engine
- Added a portal in world 1 that teleports the player to world 2

### • Mason DeClercq :

- Created the ability to jump and for the player to collide with objects
- Helped with errors teammates were having
- Objects now update their corresponding chunks
- Created assets for the game
- Fixed an issue with ray based lighting

### • Jay Edwards:

- Implemented a method to display the current fps (can do other characters but currently the array just accounts for numbers).
- The 8x8 font Mason found currently starts at (0,0). Just started changing the font to account for that.

### • Cristofer Medina Lopez:

- Corrected issues that build failing on MAC while using HUD implementation
- Continued implementation of OpenCL/OpenGL interoperability for Memworld.
  - Set up the ability for OpenCL to have access to VBOs and textures used by OpenGL to render an image on the window.
  - Updated original methods for memworld to allow for access across the frameworks for interoperability.

### • Dalton Rederick:

- Finished object generation on startup code
- Began research into publicly available art assets
- Started working on art assets
- Helped with various tasks such as verifying physics and understanding object importing

### • Collin Reeves:

- Basic physics implementation completed
  - Lots of bug fixes to go through
  - Will need to have work done later with changes to how pixel data is found

○ **Pending issues**

- *No pressing issues at this time*

○ **Individual contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b> <i>(Quick list of contributions. This should be short.)</i>	<b><u>Hours worked</u></b>	<b><u>HOURS cumulative</u></b>
Wil Blanchard	Became reacquainted with the engine in its current state. Found a way to transport players between worlds	4	35.5
Mason DeClercq	Created the ability for the player to jump and for them to collide with objects. Helped others. Implemented objects updating their chunk when necessary	16	136
Jay Edwards	Implemented a character overlay for the fps	7	43
Cristofer Medina Lopez	Implementing OpenCL/OpenGL interoperability. Set up data sharing for interoperability.	6	52.5
Dalton Rederick	Worked on command line object spawning, primarily on startup	5	43
Collin Reeves	Got basic physics algorithm implemented, bug fixing it slowly	10	48

- **Plans for the upcoming weeks**

- Wil Blanchard: Create a standard function for world switching. Develop world 1 into an actual playable level. Look into power-up implementation.

- Mason DeClercq : Implement a sprint function for the player, start implementing voxel based collision, and try to get some stars in the background

- Jay Edwards: Cleanup the HUD implementation and adjust the font.

- Cristofer Medina Lopez: Try to finish up OpenCL/OpenGL interoperability. Implement a way for using shared data in OpenCL and cleaning up memworld.c.

- Dalton Rederick: Continue work on art assets, Work on getting world 1 done.

- Collin Reeves: Finish fixing bugs in physics implementation, move on to changing how to find pixel data to clean up physics implementation in the future

- **Summary of the advisor meeting**

We did not have an advisor meeting during this period.