

EE/CprE/SE 492 BI-WEEKLY REPORT 12

September 29 – October 11

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, object based collision and voxel based collision was implemented. Physics was making progress with deflecting objects. UI was implemented to display the FPS of the application in the upper right corner. The starting world was implemented. This is where the player would spawn and be able to transfer worlds by walking through a portal. World one is close to being finished. The path the player takes is implemented. OpenGL/CL interoperability is continued to be implemented.

- **Past weeks accomplishments**

- Wil Blanchard:

- Implemented collision events for individual objects
- Created object collision event for world switching
- Added double-jump ability
- Attached double-jump ability to a power-up event
- Created power-up events and count-downs

- Mason DeClercq :

- Implemented object/voxel based collision
- Added sprinting
- Helped with physics implementation
- Helped with UI
- Fixed pixel density with lighting
- Started implementing voxel collision with the player

- Jay Edwards:

- Began working on making collectables in the world, made a collectable star and put in a counter for collectables.
- Started looking into sizing up the font

- Cristofer Medina Lopez:

- Checking integration of components. I.e. Object collision
- Continued implementation of OpenCL/OpenGL interoperability for Memworld.
 - Debugging issues regarding data sharing/accessing with interop objects.

- Dalton Rederick:

- Finished up work on world 1
 - A few fixes need to be implemented but the core is solid
- Started brainstorming ideas for world 2

- Collin Reeves:

- Basic physics implementation completed
 - Extended physics to work with voxel based collision. Added reflecting/bouncing of objects with slight dampening force.
 - Fixed some bugs with gravity/falling through objects

- **Pending issues**

- No pressing issues at this time

○ **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours worked</u>	<u>HOURS cumulative</u>
Wil Blanchard	Implemented collision events for Windows, double-jump powerup effects, world switching	6	41.5
Mason DeClercq	Implemented object/voxel based collision, Helped others, Started implementing voxel collision with the player	15	151
Jay Edwards	Implementing collectables and font size	4	47
Cristofer Medina Lopez	Implementing OpenCL/OpenGL interoperability. Debugging data sharing for interoperability.	10	62.5
Dalton Rederick	Finished up world 1, got started on world 2	7	50
Collin Reeves	Got basic physics algorithm to be integrated with voxel collision. Added dampened reflections/bouncing.	15	63

○ **Plans for the upcoming weeks**

- Wil Blanchard: Further power-up implementation (disappear power-up object on pickup, more power-up types)
- Mason DeClercq : Finish player based voxel collision, continue to help people where needed.
- Jay Edwards: Make it so when a collectable is touched it upticks the counter and removes the collectable. Get the changeable font size implemented
- Cristofer Medina Lopez: Correct bugs/issues with OpenCL/OpenGL interoperability data sharing and update rendering kernel as needed.
- Dalton Rederick: Check in on fixes for world 1 and work on getting world 2 implemented
- Collin Reeves: Fix objects being pushed 1 unit too far, ending in another object. Add angle based reflections so movement doesn't just bounce in a complete reverse direction.

- **Summary of the advisor meeting**

We had a meeting with our advisor. We showed him our progress, and he seemed happy with it. We talked about our future schedule for a little bit, and that was it.