Client Meeting 1

Week 2

Date: 05/08/2021

Start-time: 9am

Present: Michael (client), Dhruv, Dennis, Isaac, Josh, Matthew, Rodney

Meeting Commenced:

Michael stressed the importance of design architecture over Unity experience

Michael introduced the concept of a molecular dynamics simulation and their appliation to education/research

Michael identified requirements of the project:

- Real-time Graphics (60-90fps)
    - Shaders may be used
    - Asynchronis
- Multithreaded code (thread pools)
- A modular design
- Max 10 particle system
- Isolated Environment – able to run two in parrellel
- User Interface not necessary
- Scale
- Sandbox features such as create/destroy

Michael said it is up to the team to decide specific data structures and recommended Entity Component System (ECS)

Rodeny enquires about the specifications of the machines used to run the program and **Michael** says he will email them to us.

Isaac enquires about the physics system to be used in the project and

Michael explains three vector fields to consider:

- Coulomb potential
- Lennard-Jones potential
- Morse Potential

as well as Newtonian Physics

Michael warns about issues, such as small vibrations and tunnelling.

Matthew enquires about the visual aspect of the project and **Michael** replies that it is not the focus.

Isaac enquires about the use of VR headsets and **Michael** replies that it won't be necessary until later.

Dhruv enquires about common frameworks for particle simulations and

Michael recommends doing it either by particle or by force field, and that it won't matter too much for a small scale simulation.

Josh enquires about collision detection methods and **Michael** responds that it can be approximated by a *"fudge step"*.

Michael concludes by saying he would like to meet bi-weekly.

This concludes the meeting at 10am.