**Complex Game Systems Design Document**

# Brief description of the project:

The Goal of this project is to create an application(s) to host a server/client connection up to 32 connections with two data transfer option; one for position only that updates when a new position is passed across to the server and one for velocity only that “lerps” in the last know direction.

# Goals of this project:

* To Obtain a fundamental understanding of c++ networking with the use of RakNet.
* To establish a server hosted connection.
* To dynamically update a game via client and server separately.
* Showcase my understanding of networking

# Server/Client Specification:

The server will handle receiving packets from clients, establishing connections and updating client “player” data in two methods. The first being the position only method that updates when a position is sent being the less “lag friendly” method that showcases a basic connection establishment. The second method being the Velocity method that receives a players velocity and calculates the players position then send the data to all clients which is the “lag friendly” method for two reasons, one being the packet is a smaller size making is faster to send across long distances and the server will “approximate” the players position to compensate for lag

The Client will handle player movement, camera movement and the ability to switch between the two packet transfer methods. The first method calculates the players position and sends it to a server, the second method calculates the players velocity and sends it to the server to process.