##### PROJECT

#### COURSE CODE: COMP 3150

**MEMBERS:**

**DAVID CHARLES (811000385)**

**ALANA WARDEN (813004653)**

**DANELLE MODESTE (813117885)**

**AARON YUK LOW**

**Abstract**

The basis of this project was to develop an educational client/server game that uses threads and the TCP protocol. Requirements included illustrating how clients can be blocked at the server and also tracking the connected clients. The technologies used to accomplish the tasks includes Java programming Language, NetBeans IDE, J-Creator IDE, Eclipse IDE, built in java libraries, and GitHub (for version control).

The software solution developed provides the following list of functionalities:

Hosting A Game: a user can host a game (Game Server) that can allow multiple players to connect to it, the hosted game can contain up to a combination of three categories where each category is a text file (referred to as a category sheet) that can be given any name or contain any amount of questions; both questions and answers are stored in a category sheet with an answer following immediately after its question. Before starting the game the host may block any number of I.P addresses restricting those clients from playing the game. In addition, the users that are connected, the number of times they connected since the server was started, as well as their highest score amongst these sessions is displayed. The list of restricted addresses and all interactions between the server and all of the clients are logged for tracking purposes.

Joining A Game: a user can also choose to join a game by running the client application. This allows the user to take part in either a single player or multiplayer educational game and actively compete for the highest score while acquiring valuable knowledge. There can be an unlimited number of clients each allowed to play the game on their own individual thread, while being aware of the others. To join a game the user is only required to enter the I.P address of the host they want to connect to and simply wait till the game has been started.

The modularity of these two major components of the solution allows any user to host a game or become a player; where the host may also be a player in the game by simultaneously running the Client application.