CS 314 Final Project Writeup

Battleship

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The motivation behind our project was that we wanted to do something different. Before the semester we both liked the idea of recreating old games digitally, and when Professor Ames offered the final project to be anything within the scope of the course we both agreed that this would be a perfect time to code the game. We wanted something that was challenging as well as something that was different from the other projects.

While we were going about the project we came up on some issues with relaying data from one machine to another. One of the issues we were having was how we were going to be able to send the board in the smallest amount of data since we used UDP. What we did to fix this was we used a single dimension matrix. This minimized the data that we had to send over to the other user. The biggest issue we faced was when the user inputed something when it was not their turn. This resulted in the game crashing from being given unexpected data. The fix we had for this was that for every message we sent between the machines we would check if the message was valid. This meant that if it was not a location on the board then it would not go through.

Once we were able to fix these two problems, we then ran into some minor problems when playing the actual game. One was that the game allowed to user to input the same location twice. The resolution was, when we initialized the game there would be a player shipmap that had the ships as well as a hitmap for the places that the user has tried to hit on the opponents side. Using the hitmap to we were able to make sure that the location entered was empty. If it was already entered on the hitmap, we required that the user input another location. A similar issue came up when we were placing the ships. If we had overlapping ships the program would allow this, but in the actual game battleship this is not allowed. For this issue we checked if the any of the locations on the newly inputted ship overlapped with another ship. If they did, then we

would require the user to enter a new starting and ending location for the new ship. This is because we would not know how many locations it overlapped, as well as diagonals are not allowed in the game.

Overall this project was a really enjoyable project. It allowed us to choose something that we both found interesting and fun, and we had the freedom to execute this in whatever way we wanted as long as it was in the scope of the class.