Zachary Kuchar Senior Project Paper 2 2-27-19

My Senior Project has been coming along through the first three weeks. Most game functionality has been completed. These next few weeks will involve finishing up the functionality that I have yet to program, as well as implement an online mode for games that could do so.

This portion of the project involved setting up the project in Node.js for use of online functionality. I started by setting up a test document to use for Heroku, and then managed to convert the project form PHP to Node.js. I was able to set up a WebSocket server, as well as have the page load and render, along with any necessary CSS or JavaScript files. This was not without its fair share of difficulties, however. While I was familiar with setting up WebSocket servers with Node.js, there were some things involving running a node server under Heroku that I was not familiar with. I was disappointed that the process of learning about the necessary requirements and getting everything working took as long as it did. I had to use express to load the webpage, and then do some finagling in order to load any extra files that were necessary. When this step was solved, I then needed to learn how to properly set up a WebSocket server so that Heroku could interact with it. I figured out that there was not too much of a difference, however. The only real change was with changing how the WebSocket on the client end finds the server. I needed to use a fancy function such as the one down below, so that the webpage could connect to my server and send messages properly.



Figure 1. WebSocket client code

Once I set this up, I was able to test to see if the server was working correctly with some simple communication scenarios. I set up the login and create a login functions to send a message to the server, and then have the server send a message back. It seemed like there was an error with the correct message being called, but this turned out to be a simple error with if statement Booleans. Once it was fixed the server appeared to send and receive messages correctly.

Online mode

With the main server now up and running, I could begin to introduce an online mode for games. I decided not to do one for all games, since games such as Blackjack and War I felt were too simple to feature two players, and games like matching and spider solitaire could not have a second player. Crazy Eights would not be the hardest game to implement with an online mode, since I have previously worked on a similar project for a class. One main issue would be how to properly set up the change to an online mode. I originally wanted to go with a separate window that would open with the online version of the game, however, I opted to go with just porting everything in the current window into an online format. I would delete any traces of the current game and then set up a new online game. I would also change the current presenter that ran the game into an presenter of the online version.

I started off with work into integrating the online crazy eights game code into the new system. Then, I tweaked the original workings to update the status of the game through the original html document. An early issue that I noticed, was the inability to have multiple games going on at one time. Early attempts to fix this issue ended up less than successful. In the end, I opted to hold off on this problem until the main game was working online. During the setup, I also had some early trouble with removing and resetting the event listeners that were present on the given sections of the webpage. I found a way to fix this problem by cloning each of the objects that had event listeners. This allowed me to clear each of the existing event listeners on the objects present, so that I could put new event listeners on the objects for use in online play. I then continued to work on the other online functions for the game, including selecting a card to add to the pile, and picking up a card from the deck. After working through some of the kinks, I managed to get the game to be fully operational. The game was fully capable of being played with multiple people. As a final tweak, I set up the ability for a player to quit, and the other player to get notified. If a player were to quit out of an online game, the opponent would proceed to get a notification that their opponent has quit the game, and that they have won. In addition, when any player quits the game, by toggling the online mode, they will go back to a normal offline game, and they can once again can play against the computer. With time running low for the week, I opted to save on the multiple people problem for the next week. As a final procedure for the week, I began to make setups for the online modes of other games, mainly Snip snap snorum. I got the server to successfully send a message to and from regarding a test message. Hopefully by the end of the next week, I will be able to set a functioning version of the game for online play. Then, hopefully by the end of spring break, I can get go fish working in online as well.

My Senior Project is coming along quite nicely. Progress has been made on each game, and addition features are starting to be implemented. Given time, my project will hopefully have the polish that it needs.