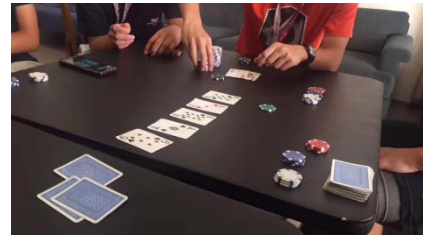# Online Texas Hold'em Poker Platform

I have been playing Texas Hold'em with my friends since the beginning of my senior year. Nothing will be more pleasing for a group of competitors than winning chips from their rivals. However, what was bothersome, if there was any, was that we had to come a long way to gather and play. Then the inter-coordination was required to guarantee that each one of us could be free in the same period of time with advance preparation. Trying to improve this inconvenience, I decided to set up an online poker platform, which would allow us to

me playing Texas Poker with friends

play anywhere at anytime. A web application would be the best choice, since it could run on any operating system, PC, Mac, and mobile phones.

Although I had some web developing experience, it was mainly associated with server and database. For instance, I took charge of the backend development in the final project of web technology course at Stanford Pre-Collegiate Studies. The advanced search function I implemented to filter colleges according to names, majors, locations, and so on made me proud. While such achievement couldn't assist this online poker platform since I haven't done any front-end development things, especially the complex logic behind Texas Hold'em Poker.

Stimulated by the passion about Texas Hold'em Poker and confidence about my independent learning ability, I challenged myself to set up this platform. I paid special attention to a series of online videos of an engineer teaching front-end developing in javascript. Likewise, I adopted javascript to simulate a card pile. Meanwhile, object oriented programing which I learned from AP Computer Science by myself helped a lot. Bearing the theoretical knowledge, I constructed the card object at first; second was a card pile object that has an array of card objects and methods including shuffle, flop, turn, river, etc. To implement an impartial and stable shuffle method, I tested my "random sorting" algorithm. It's never ineffective to run a random program repeatedly, meanwhile counting and checking the statistics to observe the general distribution, whether there was a specific pattern or it was even in a sample large enough. Sadly, the algorithm was flawed, because it showed an uneven distribution. Therefore I had to search online for advance knowledge to modify my algorithm. Finally, this scrambling process can perfectly finish in an instant; therefore cards could be shuffled quickly automatically instead of by hand.

Next to simulate is the money, so that players can bet on their cards. To represent current bet and asset more clearly, I preferred numbers than chips since numbers are more comprehensible for players to analyze the situation and make action (whether to check, raise, call, or fold). Moreover, this platform is optimized via implementing a function to find out winners by comparing and sorting. It first determines the players' card level (double, triple, straight, flush, full house or so), and then compares their high cards if tied. In this way, exactly following the rules, the winner will be found and the money will be redistributed. Thus time-consuming arguing among players could be avoided. Considering players' experience, I decided to establish instant dual connection between the server and the clients, so that they would play with more joy since no refreshing was needed. Therefore, this Online Texas Hold'em Poker Platform is created successfully, benefiting the Texas Hold'em Poker's lovers, not limited to my friends and me.

final version of my Texas Hold'em Poker Platform

Looking back, I succeeded in building this platform not only because of my will and ability to self studying and exploring, but also, most significantly, the help from coding communities. Github is where I seek help during this project. In such a great coding community, I found socket.io, which fits my nodeJS server well, and detailed instructions about this tool. Thus I was able to implement it successfully as I wanted to reach my goal. I think this is exactly the best part about coding and programing, because one can refer to numerous online resources and join communities for help. Those online communities all have an active atmosphere of sharing and helping, where knowledge is easy to access. They all motivated me to further enrich myself with knowledge and cutting-edge technology, and contribute to those community in the future to help programers of the next generation, just as what they did to help us.