**Brent Better**

**SWE 484 HA**

**Senior Project Overview**

**Problem Statement**

Learning to play poker, especially without an experienced mentor, is a challenge for most especially given the available options for learning. Either they must play enough hands to gain the required knowledge or they must purchase a book about poker.

The former option can be accomplished in one of two ways: online or at a casino. Both have their drawbacks.

Online play does not give the player an accurate concept of what live poker will be like. Players do not have to read faces, gestures, or timing. Online play is usually set to a counter dramatically decreasing the time a player has to think or analyze the hand. It also tends to have a disproportionate amount of premium hands, a catch up quality for hands that are behind, and setup hands to increase the “fun” quality of the game.

At a casino the drawback is fairly self-evident, the player has to risk real money. A novice should not walk into a casino and sit down at a poker table. In all likelihood they will lose whatever they put down and probably lose it fast. Also, playing exclusively live tables restricts the number of hands played that a player can acquire. It is a much slower game in person than online. Some 20 something year olds at the WSOP events have played millions of hands, while seasoned veterans who play regularly live haven’t played even close to that.

The ladder option has its own set of drawbacks.

Reading about something and actually doing it are two totally different experiences. There is no accomplished poker player who got where they were by simply reading a book. In reality, the book is just a supplementary tool for a player to get better. However, it is the most prudent way to learn the game. You risk nothing while learning the critical statistics involved in the game.

**Objectives of the Project**

The goal of my project would be to create a program which combines both the technical/statistical aspects from a book on poker with the required skills that successful live poker players need. The marriage of these two concepts will increase the quality of poker play of the user. After using the program adequately, the player should be able to walk into a casino and sit at a poker table with an accurate expectation of what will happen. There’s obviously no guarantees in this game, but this app should equip the player with an arsenal of information and techniques.

**Audience**

The audience for this program would be both novice and veteran poker players. The goal is to create a learning tool that covers the most basic aspects of the game up to the most complicated ones. It should be able to help any caliber player improve in some way.

**Scope of the Project**

The program will cover all aspects of poker. The user will learn the strength of their hands given a variety of board textures. They will be instructed on how to analyze another player’s movements as well as restrict their own tells. The user will learn through both reading and playing the game. The user should be able to access a specific bit of information they are looking for quickly and easily, but they should also be able to spend hours learning poker.

**Requirements for Program**

The program will be multi-sectional while simultaneously fluid so that a player can learn new concepts as they are required. It cannot be the case that the user reads for 10 hours before they play their first hand. The program must have a sensible flow in terms of its learning structure and that flow must be dictated by the app itself. The user should never be lost on what comes next in their poker education. The instructional flow, so to speak, of the app will largely be determined through trial and error. The feedback from the user, as well as their ability to play poker, will define the success of the app’s flow. The user shouldn’t be forced to read three chapters of a book, then play 10 hands, then read some more. Creating a comprehensive, sensible tutorial will be the greatest creative challenge of this project.

The two main lessons will be how to play the cards and how to play your opponent. Both are hugely important in the game of poker and no successful player can get by without each. The Playing the Cards aspect will involve statistical and strategical analysis of the game. It will provide the user a method of playing the game and written instruction about how to play the game. The Playing the Opponent section will teach the player appropriate and expected times to use their position or card odds to win a hand. That way they won’t be firing blindly to win a hand because it is exactly this type of bluff that will make a player go bust. It will also feature a brief analysis of behavioral gesture analysis so that a new player has a chance to read their opponent or more importantly, prevent themselves from giving any information away.

I’ve also talked to a close friend of mine who gave me a wish list of what he would want in the app. The most reasonable thing he wanted was for the program to be able to activate the cameras on a smartphone so that he could record his face and his hand as he played. While this is not exactly on theme with what the rest of the program will be doing, I do think that it is a great idea for a wish list for the program.

**Program Functionality**

There will be multiple game options for the user. There will be a hand simulator in which the player can create his own custom table situation (ex. number of players, board composition, hole cards). The program will provide any pertinent statistical information available. The system will also have a free play poker feature, in which the situation is random. This will test the efficacy of what the user just learned. There will also be a tutorial type section in which the player can learn from the basics to the most detailed aspects of the game in a streamlined method. This tutorial will not be a verbatim recreation of a book about poker. It will be a mix of playing, reading (possible quizzReing), and analyzing of all aspects of poker. The order in which these tasks are completed will be constructed by me and determined by my expertise and that found in the Resources section below. They will then be adjusted based on how app users respond to the tutorial.

In regards to the free play poker mode, the table will be auto-generated (number of chips, number of players). I will have to create a poker game, and program sufficient AI players that act according to the strategy that is described in the app. The game will come in two modes, cash game and tournament mode. These two different types of play are the two kinds a player will encounter in real life. In cash game mode, the player’s goal will be to win chips and preserve their stack size. The table will have a random number of players(from 2-9). They will also be given a random amount of chips relative to the table, allowing them to learn how to play big stack and little stack. The big blinds will be set initially, and won’t change. In tournament mode, the player’s goal will be to eliminate the opponents. The number of players will be nine, and the amount of chips will be equal for each player. The blinds will increase regularly after a certain amount of time.

The program will track and save the user’s progress. It will have a menu option that provides access to any individual lesson or segment of the tutorial. It will not save the progress of the free play poker mode.

**Usability**

Since poker is one of the fastest growing games in the world, and the current pool of players is dominated by young online players, the app’s UI will be geared towards users under the age of 35. Not that the app will be unfriendly or unusable to those older than that, but I will make assumptions that my target audience is savvy in using apps. This means that I won’t be instructing the user how to operate their phone, or basic navigation skills within the app. The lingo of the game will also be designed for the target group.

**Resources**

In order to build this program, I recognize there are several resources I need first in order to properly build the simulator.

<https://flutter.io/>

This will be where I design the app.

<https://www.amazon.com/Mathematics-Poker-Bill-Chen/dp/1886070253>

For the statistical aspects of the game.

<https://www.amazon.com/Play-Poker-Like-Pros-Hellmuth/dp/0060005726>

How to play poker, from the best player ever Phil Hellmuth