**Requirements Document**

SE 3XA3

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October 9, 2015

Group E

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**1.1 Purpose of the project**

The purpose of the project is to design and develop a Texas Hold-Em game that a person can play for enjoyment and improvement of their skills by getting the user acquainted with the rules of the game through gameplay, and by facing a challenging computer opponent. There are too many people who do not know the basics of the game and the goal is to help those who need a way to learn the game before entering their first professional texas Hold'em game, for example at a casino.

**1.2 Stakeholders**

**Client**

Spencer Smith

**Users**

The users are beginner Texas Hold-em players who wish to learn how to play the game. It is assumed they have no prior knowledge of the game. Users of any operating systems are accepted whether it is Windows, Macintosh OS X, or Linux users.

**Other Stakeholders**

* Supervisors
* Designers and Developers
* Testers

**2) Project Constraints**

**Mandated constraints**

The current project constraint states that the product must be completed within the span of three months. The product shall be implemented in a GUI for simple navigation. The final product shall be self contained and be able to run on any major operating system (Windows, Macintosh, Linux). The product shall be marketed toward gamers, and/or poker players. The source code shall be written entirely in Java, and uses the awt and swing libraries from Java.

**Naming Conventions**

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**Relevant Facts and Assumptions**

Relevant Facts

Assumptions

* The users are assumed to be beginners, as our version of the game will not cater to professional players
* Most users are assumed to be familiar with the operating system of their choosing for the usage of the product
* Most users are assumed to have the minimum memory and specs in order to run the game on their personal computing device

**3) Functional Requirements**

**Scope of project:**

**The current situation:**

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**The system shall:**

* have a help page that explains the rules of the game
* have a graphical user interface
* have a computer program that can play Texas Hold-Em against the user
* start a game, distribute cards, and monitor chip counts
* pit the player against a computer opponent in a match of heads up no limit Texas Hold-Em
* allow users to set the amount of chips to play with
* end the game when either player or computer loses all their chips

**4) Non-Functional Requirements**

4.1 Look and Feel Requirements

4.1.1 Appearance Requirements

* The interface should be intuitive for beginners and the look should feel familiar to users of any operating system
* The overall look should be clean and uncluttered

4.1.2 Style Requirements

* N/A

4.2 Usability and Humanity Requirements

4.2.1 Ease of Use Requirements

* The interface should be easy for a beginner player to start playing immediately after reading the rules section of the program
* The interface shall be intuitive and easy to navigate

4.2.2 Ease of Learning Requirements

* The rules section should be clear and concise so that someone with no prior knowledge can understand.

4.3 Performance Requirements

4.3.1 Speed requirements

* The computer player should respond within 2 second
* Button action(s) should be performed immediately
* The game graphic should refresh every (--) seconds

4.3.2 Safety and Critical requirements

4.3.3 Precision Requirements

* The computer player should calculate probabilities accurate to 4 decimal places
* The deck shuffling should be as random as possible

4.3.4 Reliability and Availability Requirements

* Should be available on any operating systems (Windows, OS X, Linux)
* Should be available until program close

4.3.5 Capacity Requirement

* The program shall be played by a single user on a single machine

4.4 Operational Requirements

4.4.1 Expected physical environment

* The program shall be used by a single user in any environment the user wishes

4.4.2 Expected Technological environment

* The program shall run on any machine that has java
* The program is an offline application and needs no internet connection to run

4.4.3 Partner Applications

* There are no partner applications

4.5 Maintainability and Portability Requirements

4.5.1 Ease of Maintainability

* The program need not be maintained once development has been completed

4.5.2 Portability requirements

* The product is expected to run under the Windows, Apple and LINUX operating systems.
* The product should not be resource intensive

4.6 Security requirements

* N/A

4.7 Cultural and Political requirements

* The program shall not use icons that could be considered offensive in any of our market countries.

4.8 Legal Requirements

* The program shall deal with only virtual currency
* The program will have a disclaimer stating that it does not advocate illegal gambling and should not be used as a tool to do so

**5) Project Issues**

5.1) Open issues

* Should the program include an AI that does more than read probabilities for the user to play against, if so how well should it play
* Is a GUI necessary for the scope of this project? If so, will it have to be tested?
* Is a pseudo random deck shuffler sufficient for the game or is a truly random method needed for shuffling the deck

Off-The-Shelf-Solutions:

* There are a multitude of applications on computers and phones that allow people to play texas hold em against other or against a computer.
* A no limits heads up texas holdem computer algorithm has already been developed by the University of Alberta
* Texas hold em manuals already exist to help beginners learn the game quicker

Risks

Product Related Risks:

* Computer crashes while the user is playing the game
* pseudo random deck shuffler seems to generate discernible patterns the user can spot
* games take too long for the user to win/lose

Contingency plans:

* The program will save the game after every round of hands played so that if any crashes happen the user can return to play from the previous hand dealt