Software Requirements Specification

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Version 1.3

Contents

1 Version History

Date	Version	Description	Author
Sept 6, 2012	1.0	Initial requirements developed and added	Sean, Molly, Josh, Mat
Sept 21, 2012	1.1	Response to comments and reTeXing to fit style of SDP	Josh
Oct 16, 2012	1.2	Reorganization of requirements. Added Rank to Glossary.	Josh and Molly
Oct 16, 2012	1.3	Changed requirements to reflect comments from customer. Important changes to section 6.2, and 6.8.6. Reworked sections in introduction to fit with template. Edited language.	Josh

2 Introduction

2.1 Purpose

This document will record all of the requirements of Blackjack version n.0. It will record Functional, System, Hardware, Software, Interface, and Performance requirements.

2.2 Scope

This document will establish the requirements we will adhere to when creating the blackjack software. It will serve as the customer's way of understanding what they should expect. It will also serve as our standard for what we need to do in order to satisfy the customer. This document will serve as the basis for any Testing. Furthermore, this document will serve as a record of things the customer had asked us to do. If something does not appear in this document, then it should not be expected out of the final product. However, this document does not overrule the will of the customer. If the customer should change his mind about any of the requirements herein, this document will be modified accordingly (potentially after negotiation).

2.3 Definitions, Acronyms, and Abbreviations

2.3.1 Acronyms

DEV - Developer

FA - Functional Analyst

GHz - GigaHertz

GUI - Graphical User Interface

PC - Personal Computer

QA - Quality Assurance

RAM - Random Access Memory

SA - Solutions Architect

SDD - Software Design Document

SDP - Software Development Plan

SME - Subject Matter Expert

SRS - Software Requirements Specification

TM - Traceability Matrix

2.3.2   Definitions

.NET - .NET is an integral part of many applications running on Windows and provides common functionality for those applications to run.

Blackjack - The game of we are making our software to simulate.

Blackjack - A hand in the game blackjack that consists of only an ace and a face card. This hand is superior to all other non-blackjack hands.

Dealer - The computer controlled player

Face Card - Jack, Queen, or King

Hit - A move in blackjack. The person who makes the move is dealt a card from the deck

Player - A person or AI participating in a game of blackjack

Rank - The number of points associated with a card. For numbered cards, the rank is equal to the number. For facecards, the rank is equal to 10. For aces, the rank can be either 11 or 1.

Split - A move in blackjack. The user splits their hand into two separate hands, and makes a bet on the second hand equal to the initial bet. The player then proceeds to play both hands separately.

Stand - A move in blackjack. This move signifies the end of the players turn.

Test - A formal practice of subjecting a piece of software to various conditions in order to ensure it functions.

User - The human interfacing with the game

2.3.3   Abbreviations

Dec - December

Oct - October

Sept - September

gig - Gigabyte

2.4   References

- SDP version 1.4
- TM version 1.0
- SDD version 1.5
- STP version 0.0
- GUI version 1.0
- Code version 1.0
- Glossary - see section 2.3
- Other - Microsoft.com provided the definition for .NET.
- Other - Thank you to GitHub.com for allowing our team to collaborate online.

2.5   Project Overview

We are going to create a fully functional GUI based 1-player blackjack game.

3 Functional Description

3.1 Language and Terminology

Planned program features will use the following words to indicate whether a requirement is something the development team feels will benefit the project, or is specifically requested by the customer.

must - Indicates a feature specifically requested by the customer.

will - Indicates a feature that is not requested, but is intended to be included in the software project.

3.2 Title

Programs GUI **must** be headed by title text indicating the game being played (i.e. Blackjack).

3.3 Menu Bar

Programs GUI **must** contain a standardized menu bar situated at the top of the GUI.

3.3.1 File Button

Programs menu **must** include a button to create a drop-down File menu.

3.3.2 Restart Button

Programs File Button menu **must** include a button to start a new game.

3.3.3 Statistics Button

3.3.3.1 Programs File Button menu **must** include a button to view the users gameplay statistics.

3.3.3.2 The Statistics Button dialog **must** show the number of wins, losses, the largest win, and the greatest lost.

3.3.4 Exit

Programs File Button menu **must** include a button to exit the program.

3.3.5 Help Button

Programs menu **must** include a button to seek help.

3.3.6 About Menu

3.3.6.1 Programs Help button **must** display the name of the software.

3.3.6.2 Programs Help button **must** display the authors of the software.

3.3.6.3 Programs Help button **will** display the date of creation of the software.

3.3.6.4 The information **must** include the software version number.

3.4 Graphics

Program **must** access and display many visual resources, to include Windows graphics packages and external image files to represent objects in-game.

3.4.1   Back Card Display

Graphics **must** include an image to represent the back of a playing card (i.e., face-down).

3.4.1.1   The image **must** not show the value or suit of the card.

3.4.2   Card Front Display

Graphics **must** include an image to represent the front of a playing card (i.e., face-up).

3.4.2.1   This graphic **must** display the suit and value of the card.

3.4.3   Deck Display

Graphics **must** include an image to represent more than one card in a stack or deck.

3.4.4   Background

Graphics **must** include an image to represent the background of the game window (i.e., the 'table' on which Blackjack is being played).

3.4.5   Money Display

Graphics **must** include an actively-updated text field where the users current funds are to be displayed.

3.4.5.1   This display **must** include a label saying: Funds: followed by the amount of money the player currently has.

3.4.6   Users Name

Graphics **must** include an actively-updated text field in which the users Name is displayed.

3.4.7   Hit Button

Graphics **must** include a button for the user to indicate their wish to Hit.

3.4.8   Split Button

Graphics **must** include a button for the user to Split.

3.4.9   Stand Button

Graphics **must** include a button for the user to Stand.

3.4.10   Betting Box

Graphics **must** include a betting box.

3.5   Splash Screens

3.5.1   Game Ended Pop Up

Program **must** display a pop-up window or splash screen when the game ends.

3.5.1.1   It **must** display a message telling the user that they have won or lost

3.5.1.2   It **must** prompt the user to play again.

3.6   Start up

3.6.1   Initialization

Program **must** initialize all buttons to be inactive.

3.6.1.1   Funds **must** start at $500.00.

3.6.1.2   Username **must** start as "".

3.6.1.3   The Deck **will** start empty of cards.

3.6.2   Start GUI

3.6.2.1   The screen **must** appear without any cards dealt.

3.6.3   Prompt for user name

Program **must** prompt the user for their user name, and display it on the GUI.

3.6.3.1   This prompt **will** be in the form of a pop-up window or splash screen.

3.7   Hit

3.7.1   Get a Card

A new card **must** appear in the players hand

3.7.2   BustCheck

The player **must** lose the game if they have more than 21 points.

3.7.3   Can Always Hit

The hit button **must** be available whenever the game is in progress

3.8   Split

3.8.1   Only on First Turn

The split button **must** not be available if it is not the first turn

3.8.2   Only with a Pair

The split button **must** only be available if the user has two of the same card.

3.8.3   Play Twice

The split button **must** allow the player to play each card as a separate game.

3.8.4   Make a New Bet

The split button **must** place an additional bet equal to the first

3.8.5   Must be Able to Bet

The split button **must** not be available if the users money is less than their current bet

3.8.6 Play the Other Later

The split button **must** cause one of the players cards to appear in a separate hand next to the first one.

3.8.7 Display Second Bet

The split button **must** display the second bet outside the betting box

3.9 Stand

3.9.1 Dealer's Turn

The stand button **must** initiate the dealers turn

3.9.2 Can Always Stand

The stand button **must** be available whenever a game is in progress

3.9.3 Stand Ends Game

The stand button **must** end the game

3.10 Dealer AI

3.10.1 Dealer Hits

Dealer **must** hit if the total rank of cards in the dealer's hand is less than 18

3.10.2 Dealer Stands

Dealer **must** stand if the total rank of cards in the dealer's hand is 18 or more

3.11 Shuffling

3.11.1 When to Shuffle

When the deck is empty, shuffling **must** happen before a card can be dealt.

3.11.2 Don't Pick up Cards

Cards that are in play **must** not be involved in shuffling

3.11.3 Randomization

Drawing a card from the deck **must** give a pseudorandom card.

3.11.4 Independence

Two shuffles **must** be independent

3.12 BlackjackCheck

3.12.1 Blackjack

If the player has a face card and an ace, then they **must** have blackjack

3.12.2 Blackjack Ends Game

If a player has blackjack, play **must** automatically proceed to the dealer

3.13   WinLoss Comparison

3.13.1   Bust Ends Game

If a player has over 21 points, the game **must** end immediately

3.13.2   Bust Condition

If a player has over 21 points, that player **must** lose

3.13.3   Dealer Stands Ends Game

If the dealer stands, the game **must** end

3.13.4   No Bust Win Condition

If a game ends, and no player has over 21 points, and a player has more points than the other player, that player **must** win

3.13.5   Draw Condition

If both players have the same number of points, no players **must** win

3.13.6   Dealer Win

If the dealer wins, then the user **must** lose

3.13.7   Dealer Lose

If the dealer loses, then the user **must** win

3.14   Betting

3.14.1   Initial Bet

The user **must** bet at the beginning of each game

3.14.2   Max Bet

The user **must** not be able to bet more than they have

3.14.3   Min Bet

The user **must** not be able to bet less than $20

3.14.4   Only Initial Bets

The user **must** not be able to bet during a game

3.14.5   Earnings

The user **must** receive twice their bet back if they win

3.14.6   Losses

The user **must** receive no money back if they lose

3.14.7 Restrictions on Bets

The user **must** not be able to bet an amount that is not an integer

3.14.8 Putting up the Bet

The users money **must** decrease by the amount bet

3.14.9 Receiving Winnings

The users money **must** increase by the amount won

3.14.10 In Case of Tie

The user **must** receive their money back if no one wins

4 System Requirements

4.1 Hardware Requirements

4.1.0.1   Windows compatible personal computer

4.1.0.2   4GB of RAM

4.1.0.3   2.0 GHz CPU

4.2 Software Requirements

4.2.0.4   .NET 4

4.2.0.5   Windows 7

5 Interfaces

5.1 Standalone Program

The program **will** not run in a manner that includes any network interaction.

5.2 Use of Windows

The program **must** run on computers using the Windows operating system.

5.3 Use of Keyboard and Mouse

The program **must** take input via a computer keyboard and computer mouse.

6 Performance

6.1 Size

The program **must** take up less than 1.0 gig of memory at any time.

6.2 Speed

6.2.0.6   All moves except for stand **must** complete in less than 1.0 second.

6.2.0.7   If any action takes more than 1.0 second a waiting message **must** be displayed.

6.2.0.8   The time from the player taking the stand action until the end of the game **must** take less than 5.0 seconds.

7   Delivery

7.1   CD-ROM

7.1.0.9   Compiled program files **will** be delivered on a CD-ROM.

7.1.0.10   Users **must** be able to run the program by double-clicking or otherwise activating the .exe file on the CD-ROM.

7.2   Installation

7.2.0.11   The program **will** not contain any installation methods

7.2.0.12   The program **will** not be supported post-release.

7.2.0.13   The user **will** bear the responsibility for accessing the CD-ROM and activating the executable.

8   Schedule

8.1   Final Release

The final release of blackjack **must** be on or before Dec 3, 2012.

9   Miscellaneous

No Miscellaneous requirements.