Poker++

PROJECT GROUP 5

2/28/2020

# Introduction

## Group Members

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|  | Members of the project group are Shishir Acharya, Randall Ferree and Robbie Frazier. Member contributions are summarized below:   * S.Acharya: System models (state diagram) * R.Ferree: GUI and events list * R.Frazier: Requirements table and system models (context and activity diagrams) |

## Project Overview

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|  | The scope of this project is to design and develop a multiplayer 5 Card Draw Poker software system. The system will consist of separate applications for a dealer and multiple players and will support inter-application communication. The rules of the game are based on the information found in the video at the address below.  <https://www.youtube.com/watch?v=UmtSUhSfyYE>  The primary requirements were derived from a project description document provided by the primary stakeholder – Mr. Bud Davis, instructor of the CSE-3310-002 course during the Spring 2020 semester at the University of Texas at Arlington. Additional requirements were determined by in-class discussion and collaboration among the members of this group. |

# Requirements

## Requirements Table

| REQID | F/NF | DEALER / PLAYER | DESCRIPTION | TEST CASE | SOURCE | CLASS / METHOD | NOTES |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 01.00 | F | Dealer | The system shall accommodate exactly one dealer process | A second instance of the dealer application will fail to open on the same port | Project Description |  |  |
| 02.00 | NF | Dealer | The dealer shall control the deck of cards |  | Analysis |  |  |
| 03.00 | F | Dealer | The system shall accommodate two, three, four or five player processes | Gameplay will not start with fewer than two player processes The dealer will not accept a sixth player process until an existing player has left the game | Project Description |  |  |
| 03.01 | NF | Dealer | Each player shall have a unique identifier |  | Project Description |  |  |
| 03.02 | F | Player | Players shall only be able to see the face values of cards in their own hand |  | Video |  |  |
| 04.00 | F | Dealer | The card deck shall consist of 52 cards |  | Video |  |  |
| 04.01 | F | Dealer | The card deck shall consist of 4 suits: hearts, spades, diamonds, clubs |  | Video |  |  |
| 04.02 | F | Dealer | Each suit shall consist of cards Ace, 2, 3, 4, 5, 6, 7 ,8 ,9, 10, Jack, Queen, King |  | Video |  |  |
| 04.03 | F | Dealer | Ace can be high (above King) or low (below 2) |  | Video |  |  |
| 05.00 | F | Dealer | The deck shall be shuffled by the dealer three times at the beginning of each hand |  | Video |  |  |
| 05.01 | F | Dealer | Cards shall be dealt by the dealer from the deck one at a time to each player in sequential order clockwise from left until each player has five cards |  | Video |  |  |
| 06.00 | F | Dealer | The system shall accommodate a discard pile for all unwanted or folded cards |  | Analysis |  |  |
| ~~07.00~~ | ~~F~~ | ~~Dealer, Player~~ | ~~There shall be three denominations of betting chips~~ |  | ~~Video~~ |  | Obsoleted |
| ~~07.01~~ | ~~F~~ | ~~Dealer, Player~~ | ~~White chips shall have a value of $1~~ |  | ~~Video~~ |  | Obsoleted |
| ~~07.02~~ | ~~F~~ | ~~Dealer, Player~~ | ~~Red chips shall have a value of $5~~ |  | ~~Video~~ |  | Obsoleted |
| ~~07.03~~ | ~~F~~ | ~~Dealer, Player~~ | ~~Blue chips shall have a value of $25~~ |  | ~~Video~~ |  | Obsoleted |
| 08.00 | F | Player | Each player shall begin with $100 |  | Video |  | Removed chips and replaced with value |
| 09.00 | F | Dealer, Player | Each player shall ante $1 to enter the hand |  | Video |  |  |
| 09.01 | F | Dealer | The ante shall establish the opening prize pot for winning the hand | Verify the initial ante is equal to the number of player processes | Video |  |  |
| 10.00 | F | Dealer, Player | Each player shall check, bet, raise, call or fold after receiving their hand |  | Video |  |  |
| 10.01 | F | Dealer, Player | The actions shall occur in order from first player to last clockwise from left | Test that buttons are active for player in turn and inactive for players out of turn | Video |  |  |
| 10.02 | F | Dealer, Player | Check means a player makes no bet ($0) |  | Video |  |  |
| 10.03 | F | Dealer, Player | A player can check only if no other player has placed a bet | If prize pot > ante, check button is inactive for all players | Video |  |  |
| 10.04 | F | Dealer, Player | If all players check, the prize for winning the hand is equal to the total ante |  | Video |  |  |
| 10.05 | F | Dealer, Player | Bet means a player wagers some amount of his/her chips to the prize pot |  | Video |  |  |
| 10.06 | F | Dealer, Player | The first bet sets the current bet value (minimum bet amount) | Verify the bet value token after a bet is placed | Video |  |  |
| 10.07 | F | Dealer, Player | After a player bets, all other players still in the hand must either call, raise or fold | Set a must bet flag for all other players when a player increases the bet amount | Video |  |  |
| 10.08 | F | Dealer, Player | Raise means a player wagers some amount higher than the current bet | Verify the bet value token after the bet is raised | Video |  |  |
| 10.09 | F | Dealer, Player | If a player raises, the new raised bet becomes the current bet | Set a must bet flag for all other players when a player increases the bet amount | Video |  |  |
| 10.10 | F | Dealer, Player | Call means a player who previously placed a lower bet than the current bet increases his/her bet to meet the current bet |  | Video |  |  |
| 10.11 | F | Dealer, Player | If a player calls, the current bet value remains unchanged | Verify that the player bet amount changed to match the bet amount | Video |  |  |
| 10.12 | F | Dealer, Player | Fold means a player wishes to withdraw from the hand |  | Video |  |  |
| 10.13 | F | Dealer, Player | If a player folds, he/she forfeits his/her existing bet amount | Verify all buttons are inactive for folded player | Video |  |  |
| 10.14 | F | Dealer, Player | If a player folds, he/she discards all his/her cards into the discard pile |  | Video |  |  |
| 11.00 | F | Dealer, Player | After the initial betting round, players may exchange 0, 1, 2, 3 or 4 cards of their choice |  | Video |  |  |
| 11.01 | F | Dealer | If a player exchanges cards, his/her discards are placed in the discard pile and the dealer deals the requested number of new cards from the deck |  | Analysis |  |  |
| 12.00 | F | Dealer, Player | After all players have exchanged cards or chosen to keep their existing hand, a new betting round begins |  | Video |  |  |
| 12.01 | F | Dealer, Player | The second betting round follows the same rules as the first betting round |  | Video |  |  |
| 13.00 | F | Dealer, Player | After the second betting round, all players hands are displayed for all to see |  | Video |  |  |
| 13.01 | F | Dealer | The player with the winning hand earns the prize pot |  | Video |  |  |
| 13.02 | NF | Dealer | A lone high card is the lowest value hand (value = 10) |  | Video |  |  |
| 13.03 | F | Dealer | A lone high card is a card without a pair or matching suit |  | Video |  |  |
| 13.04 | NF | Dealer | One pair is the next higher value hand (value = 20) |  | Video |  |  |
| 13.05 | F | Dealer | One pair is any single pair of cards with the same face value |  | Video |  |  |
| 13.06 | NF | Dealer | Two pairs is the next higher value hand (value = 30) |  | Video |  |  |
| 13.07 | F | Dealer | Two pairs are any two pairs of cards with the same face values |  | Video |  |  |
| 13.08 | NF | Dealer | Three of a kind is the next higher value hand (value = 40) |  | Video |  |  |
| 13.09 | F | Dealer | Three of a kind is any single set of three cards with the same face value |  | Video |  |  |
| 13.10 | NF | Dealer | A straight is the next higher value hand (value = 50) |  | Video |  |  |
| 13.11 | F | Dealer | A straight is a set of all five cards with sequential face values |  | Video |  |  |
| 13.12 | NF | Dealer | A flush is the next higher value hand (value = 60) |  | Video |  |  |
| 13.13 | F | Dealer | A flush is a set of all five cards with the same suit |  | Video |  |  |
| 13.14 | NF | Dealer | A full house is the next higher value hand (value = 70) |  | Video |  |  |
| 13.15 | F | Dealer | A full house is a set of three cards with the same face value and a pair with the same face value |  | Video |  |  |
| 13.16 | NF | Dealer | Four of a kind is the next higher value hand (value = 80) |  | Video |  |  |
| 13.17 | F | Dealer | Four of a kind is any single set of four cards with the same face value |  | Video |  |  |
| 13.18 | NF | Dealer | A straight flush is the next higher value hand (value = 90) |  | Video |  |  |
| 13.19 | F | Dealer | A straight flush is a set of all five cards with the same suit and sequential face values |  | Video |  |  |
| 13.20 | NF | Dealer | A royal flush is the highest value hand (value = 100) |  | Video |  |  |
| 13.21 | F | Dealer | A royal flush is a straight flush containing 10, J, Q, K and A from the same suit |  | Video |  |  |
|  | NF | Dealer | \*\*\*NEED TO DEFINE HOW TO HANDLE TIE\*\*\* |  |  |  |  |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |

## User Interface

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| --- | --- |
|  | Requirements Cross Reference   1. Button – 10.00, 10.07, 10.12, 10.13, 10.14 2. Button – (Check) 10.00, 10.02, 10.03, 10.04, (Discard) 11.00, 11.01 3. Button – (Call) 10.00, 10.10, 10.11 (Bet/Raise) 10.00, 10.05, 10.06, 10.07, 10.08, 10.09 4. Slider – 10.00, 10.05, 10.06, 10.06, 10.07, 10.08, 10.09, 10.10, 10.11 5. Client cards – 3.02, 11.00, 11.01 6. Other clients – 3.02, 13.00 7. Info – 9.01, 10.00, 11.00, 12.00, 12.01, 13.00 |

## System Models

|  |  |
| --- | --- |
|  | context diagram    state diagram  activity diagram |

# Software Design

## Class Diagram

|  |  |
| --- | --- |
|  | Insert system class diagram here |

## Difficult Mechanization

|  |  |
| --- | --- |
|  | Discuss complex problems encountered during the design activity. Best hand, player sequence, order of play, etc. |

# Test Procedures

## Test Case 1

|  |  |
| --- | --- |
|  | Describe first test case here |

## Test Case 2…

|  |  |
| --- | --- |
|  | Describe second test case here… |

## Defect List

|  |  |
| --- | --- |
|  | List all defects found while executing tests. Describe the defect, test case where identified, how corrected |

# Project Evaluation

## Summary

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|  | Summarize the results of the project here |