Professor Miller

Senior Project

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Presidents Specifications

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Abstract: For my senior project I plan to create a two player card game known as *Presidents*. I will create it as a networked GUI application in C#.

Game

Description of the game: Presidents is a fairly straightforward round-based card game which utilizes a normal 52 card deck. The object of the game is to be the first player to get rid of all of your cards.

Rules

* Played hands must be one of the following “poker” hands: Straight flush, four of a kind, full house, flush, straight, three of a kind, pair, high card
* Whichever player has the three of diamonds is required to go first and their opening hand must utilize that card.
* A player wins a round by playing a hand which no other player can beat. (players have the ability to pass regardless of their cards).
* Unless a player has just won a round, he/she must put down a better hand, which also has the same number of cards as the hand player by their opponent.
* The “value” of cards is as expected with the exception that **2’s are the highest cards in the game**
  + Note: “Value” of suits: Diamonds -> Hearts -> Clubs -> Spades
* Evaluating hands follows the same rules as poker.
  + Straight flush, four of a kind, full house, flush, straight, three of a kind, pair, high card

Flow of the game

* The cards are shuffled and the entire deck is dealt out amongst the players.
* The game is played in rounds. (Winning a round is advantageous to a player because it means that he/she can play any hand to begin the next round.)
* Players take turns moving clockwise.

Name origins

* Initially developed as a drinking game
* Winner of a game is called the president and can order the other players to drink.

Development

I am developing *Presidents* in C# and will be primarily using it’s built in forms functionality. .NET sockets will provide me with the utilities I need in order to implement the networking features.

Architecture

* Client/Server model (Event driven updates)
  + Server holds all necessary information about the cards and state of player decks.
  + Clients send messages to server which then validates moves.
    - Clients have string-image hash table associating a message with an image.
  + Each time a client presses a button, both clients screens are redrawn.
* Screens
  + Main menu
    - Allows the clients of the game to initiate a match, may provide other yet to be determined options.
  + Lobby
    - Virtual waiting room. Both players must be connected to the server in order to begin a game.
  + Game screen
    - The screen which allows the players to actually play the game.
      * Cards drawn on the screen.
        + Player's own cards, last hand played.
      * Buttons
        + Allows players to play a move or pass.
        + Restart (appears after game completion).
* Assets
  + Cards are images with transparent panels on top of them which allow them to be selected.
* Validation
  + Prevent users from playing any invalid moves subject to the rules above.
  + Use message boxes to inform users about invalid moves.
  + Do not update game state unless a move is valid.
* Reach goals:
  + Enhanced statistics - Win percentage, tournament mode, number of hands needed to win
  + More players - 4 player game
  + Chat - Allow players to communicate with one another via text chat
  + Evaluate the strength of hands - Determine the percentage chance a player has to win a round with a selected hand.
    - Note: Hard to determine given that players can pass and may save cards in accordance with their strategy.
  + Victory/ Loser screen
    - Special screen to be presented to players after game completion.
  + Music