CSC 667-02

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Milestone 4: Application Logic

GitHub Repository: [Term Project Team JAKE](#)

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List of Actions a User Can Perform

- Draw a card
  - Triggered by: Clicking on the Deck when prompted
  - Outcome: User receives a new card into their hand
- Play card
  - Triggered by: Clicking on a card in hand that is playable
  - Outcome: Card is moved to the discard pile
- Choose a color
  - Triggered by: A user discards either Wild cards
  - Outcome: The same user chooses which of the 4 colors to set
- Leave match
  - Triggered by: Clicking on the "Leave Match" button
  - Outcome: Player is taken back to menu screen
- Chat message
  - Triggered by: typing a message and hitting send
  - Outcome: message is broadcast to other players
- Find Game
  - Triggered by: user clicking on "Find Game" button
  - Outcome: user is placed in a queue while other users are gathered
- Log out
  - Triggered by: user deciding to log out from our site
  - Outcome: user is logged out of their session and returns them to the login screen
- Log in
  - Users enter their registered account info to login
- Create account
  - A user enters their required credentials to create a new account for themself

List of Events That May Occur in the System

- Add cards to player's hand
    - Triggered by: Player Drawing, +2, or +4 wild
    - Outcome: cards added to appropriate player's hand
- Checking the validity of a card
    - Triggered by: User attempting to play a card
    - Outcome: card is added to discard or rejected
- Shuffle Deck
    - Triggered by: Card deck list being exhausted
    - Outcome: Shuffles a new deck excluding the cards in the users hand and the card currently at the top of the discard pile
- Player winning
    - Triggered by: a player discarding all of their cards in their hand
    - Outcome: this player is announced as the winner and returns all players to the lobby
- Player leaves match
    - Triggered by: A player losing connection or hitting "Leave Match" button
    - Outcome: That player and the according hand are removed and the order moves to the next player.
- Send message
    - Triggered by: receiving a chat message from a player
    - Outcome: displaying the message to all players
- Matchmaking
    - Triggered by: user clicks Find Game to start searching for a match
    - Outcome: gathers other users until 4 users are gathered and starts the match.
- Game Start
    - Triggered by: New game starts when all users are gathered
    - Outcome: distributes random cards to each player and randomly selects an order to start at.
- Chat
    - Triggered by: a user submitting a message in the chat box
    - Outcome: everyone in the same lobby will see the message sent

API

- GET /cardhub/users
    - Request for created users
- POST /cardhub/users
    - Registering new users
- GET /cardhub/game
    - Search for games
- POST /cardhub/game
    - Creates and begins a game session with a random order started
- GET /cardhub/game_users
    - List of players in the game with a list of cards they each hold
- POST /cardhub/game_users
    - Update a player's hand when they play a card
- GET /cardhub/cards
    - Request for the cards' respective id, value, and color
- POST /cardhub/cards
    - Create a shuffled deck of cards for the game session
- HEAD /cardhub/game_cards
    - Request game_id, card_id, user_id, discarded
- GET /cardhub/messages
    - Request message_id, user_id, game_id, messages, time
- PUT /cardhub/messages
    - Send messages and update the chat box

Updated Diagram

Player Layout

- Player 1
- Player 2
- Player 3
- Player 4
- Deck pile
- Discard pile
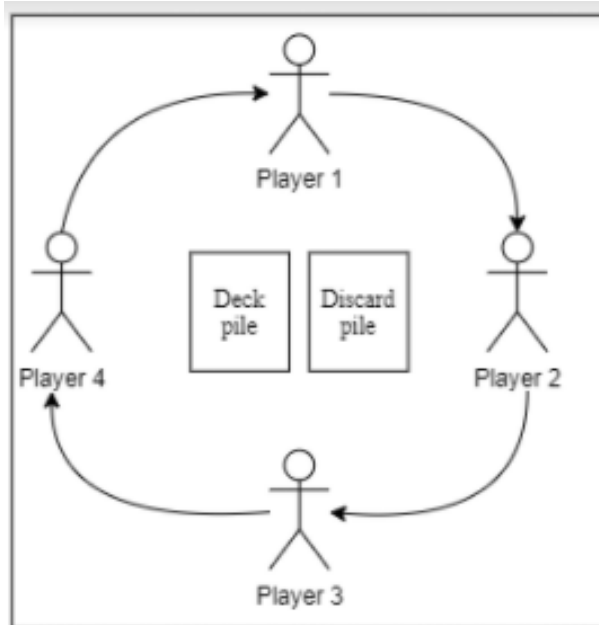
Assumptions

Wilds will have color type outside the 4 colors

Checks are designed to get a success with the fewest attempts

Skip, Draw 2, and Reverse will have their own number values, outside the range of 0-9

Traditional rules. No stacking +2, using 7s or 0s to swap hands, etc.

At any time a player's hand-size drops to 1, Uno is automatically called out

Flowchart

- Player's Turn
- Player must choose a card to play
- Does the Player choose to draw a card? — No / Yes
- Player Draws 1 card
- Update top card of discard pile / Next players turn
- Check if color is the same — No
- Check if the number is the same — No
- Is Skip, Draw 2, or Reverse? — Yes / No
  - Reverse → Reverse player order
  - Skip → Set next player to one ahead of order
  - Draw2 → Next player Draws 2
- Check for wild — Yes / No
- Prompt player for color choice
- Change Wild card's color to choice
- Is Draw 4? — Yes → Next player Draws 4 / No
- Return Invalid choice