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## Digital Poker Checklist

### Video Display

- Display user's cards on screen with
  - value (character from ROM)
  - suit image (from ROM)
- Display computer's cards face up during showdown state (face down during other states unless in debug mode)
- During each state, display instruction at top of screen instructing player what to do next
- Display both players' scores
- Display both players' registered bets for the current round
- During betting states, display player 1's current attempted bet on screen as user clicks on various bet buttons successively (before they register final bet by pressing the labkit's enter button)
- After cards have been dealt, display one of several predefined faces to screen based on inputs from user and computer move generator (stored face images come from Face ROM). These faces may be updated during each face state
- Display buttons on screen during betting states with possible bet amounts. Buttons should change color when user clicks on them and return to the default color when unclicked
- Display mouse cursor which moves as user moves actual mouse
- During card exchange states, change color of cards user wants to exchange before he/she presses the labkit's enter button (to keep track of which cards user has already chosen)

### Card Dealing

Player and computer are each assigned 5 randomly generated cards. Player's card values are displayed on the screen, while computer's card values are hidden until showdown state. In debug mode, computer's card values are also always displayed.

### Player Betting

By clicking on bet boxes on the screen with a mouse, the player can select how much money to bet, as long as the amount is less than or equal their total amount of money.

### Computer Betting

Given the inputs of opponent's face, opponent's bet, computer's cards, computer's total money, and computer's personality, computer will select an amount of money to bet and that amount will be displayed on the screen.

### Player Discard

By clicking on cards on the screen with a mouse, the player can select up to 3 cards to discard and these cards will be replaced with new random cards.

### Computer Discard

Given an input of 5 cards, computer will choose up to 3 cards to be discarded and randomly replaced.

### Card Comparison

Given 2 hands (2 sets of 5 cards), the game controller will compare the hands and choose a winner based on poker hand ratings and display who that is on the screen.

### Multiple Rounds

When a round ends, if both players still have money left, the user will see instructions on the screen to hit a new-round button. After hitting this, new cards will be dealt and a new round will begin. If one of the players has gone bankrupt, a game over screen will be displayed and the user will need to hit a reset button to start a new game.

### Computer Personalities

Given a personality, computer can choose correct face, and it will be displayed on the screen.

### Facial Feature Detector (FFD)

During Face states, when user presses labkit's enter button, the Facial Feature Detector is activated.

Streaming image from the camera is stored and FFD does pattern matching on this data. It scans the next frame of video data pixels of a particular color (since each of the predefined faces has a unique feature of a particular color).

The p1\_face signal is output to the Game Controller if one of the predefined faces has been matched, and a resend is requested if there is no match.

The selected face is output on the screen.