

Blackjack Game Specification and Design

Black Jack Rules

Blackjack Rules

1. Object of the game:

beat the dealer by getting a count as close to 21 as possible, without going over 21

2. Card Values

ace is worth 1 or 11, J,Q,K are 10, other card is its pip value

3. Betting

for simplicity, we don't bet.

4. Shuffle and cut

the dealer shuffles the pack of card, no need player cut

5. Deal

dealer gives one card face up to each player, and one card face up for himself. Another round of cards is then dealt face up to each player, but the dealer takes the second card face down.

6. Naturals

If a player's first two cards are an ace and a "ten-card" (a picture card or 10), giving a count of 21 in two cards, this is a natural or "blackjack." If any player has a natural and the dealer does not, the dealer loses. If the dealer has a natural, other doesn't, dealer wins. If both dealer and player have natural, no body wins.

7. The Play

any player on his turn must decide whether to "stand" (not ask for another card) or "hit" (ask for another card in an attempt to get closer to a count of 21, or even hit 21 exactly). Thus, a player may stand on the two cards originally dealt to them, or they may ask the dealer for additional cards, one at a time, until deciding to stand on the total (if it is 21 or under), or goes "bust" (if it is

over 21). In the latter case, play loses the game. The dealer then turns to the next player and serves them in the same manner. The combination of an ace with a card other than a ten-card is known as a "soft hand," because the player can count the ace as a 1 or 11, and either draw cards or not. For example with a "soft 17" (an ace and a 6), the total is 7 or 17. While a count of 17 is a good hand, the player may wish to draw for a higher total. If the draw creates a bust hand by counting the ace as an 11, the player simply counts the ace as a 1 and continues playing by standing or "hitting" (asking the dealer for additional cards, one at a time).

8. The Dealer's Play

When the dealer has served every player, the dealers face-down card is turned up. If the total is 17 or more, it must stand. If the total is 16 or under, they must take a card. The dealer must continue to take cards until the total is 17 or more, at which point the dealer must stand. If the dealer has an ace, and counting it as 11 would bring the total to 17 or more (but not over 21), the dealer must count the ace as 11 and stand. The dealer's decisions, then, are automatic on all plays, whereas the player always has the option of taking one or more cards.

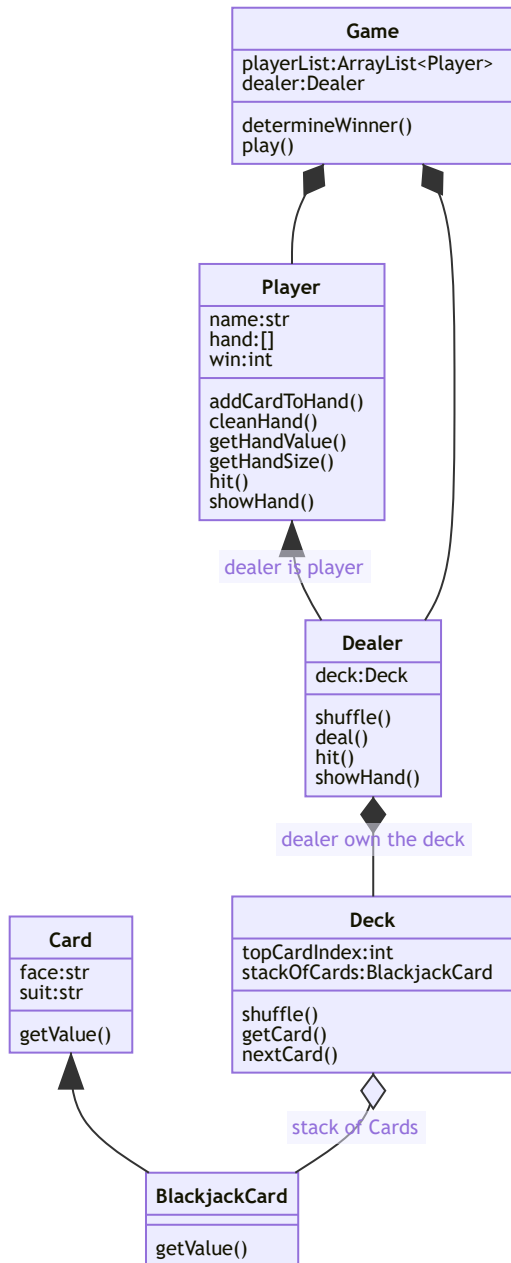
9. No Splitting Pairs

10. No Doubling Down

11. No Insurance

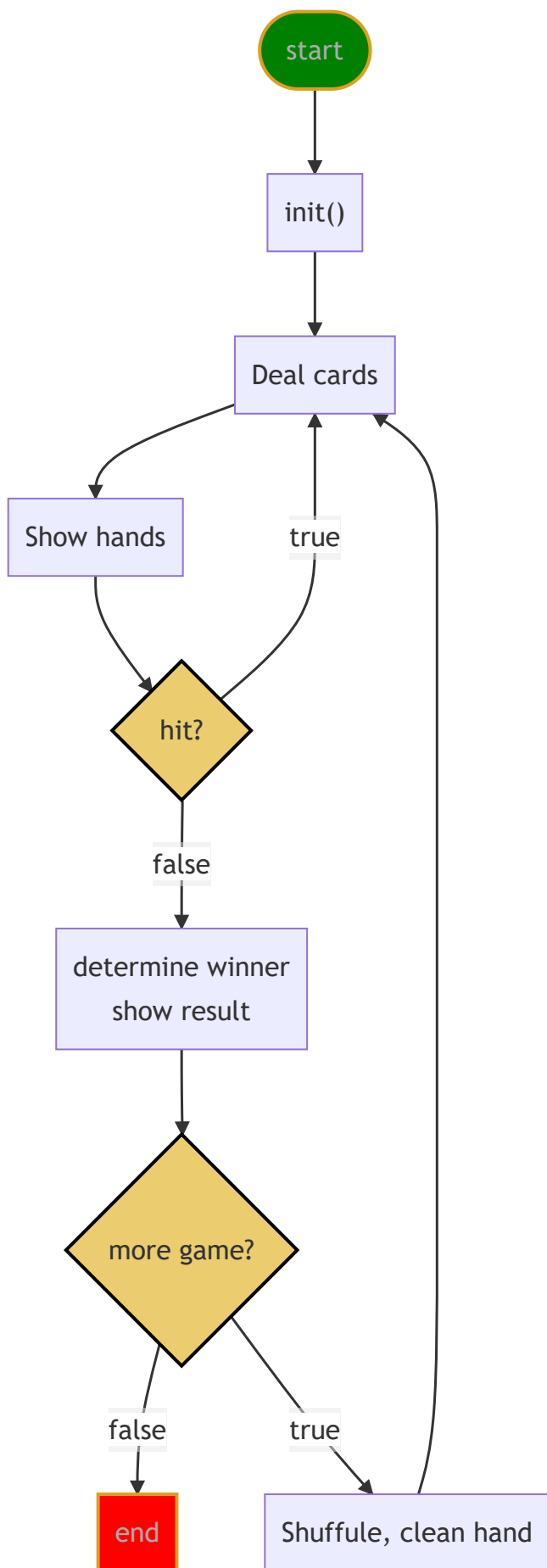
12. Reshuffling when start new game.

Object relationship

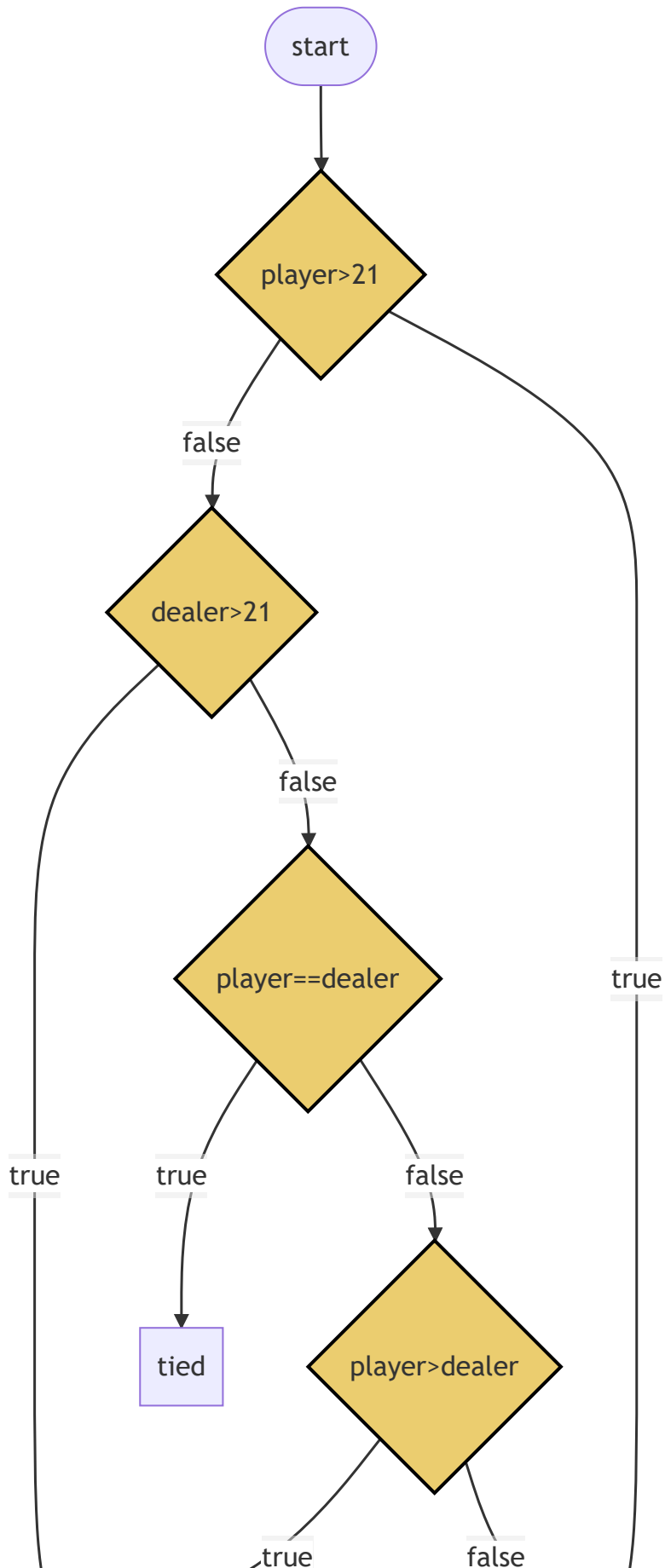


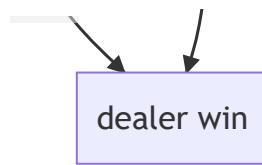
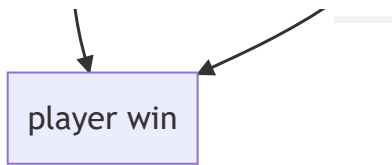
blackjack
Unit test

Game logic



Code Optimization



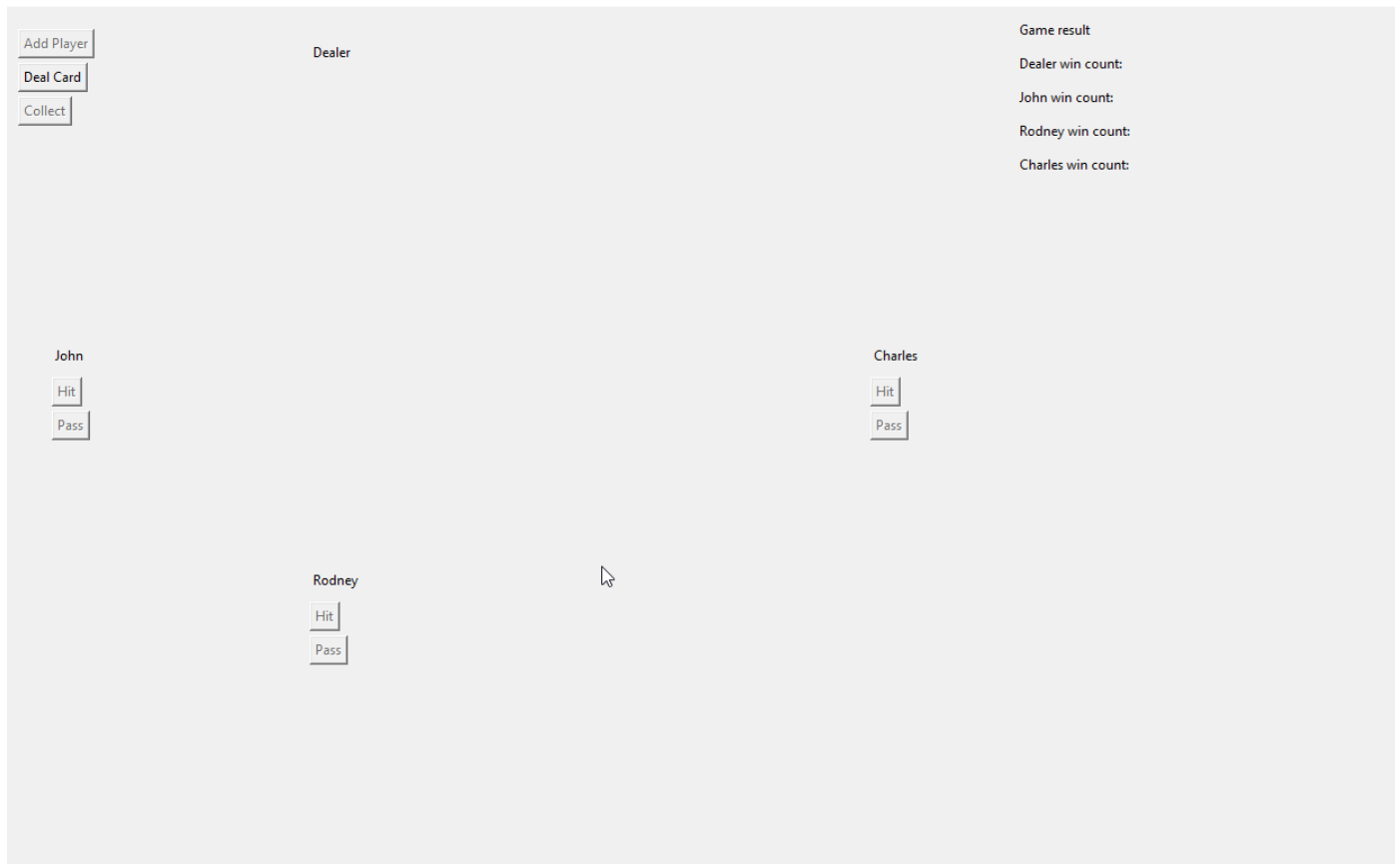


Unit test cases

- player get 4 Ace
- player get 3 Ace
- player get 2 Ace

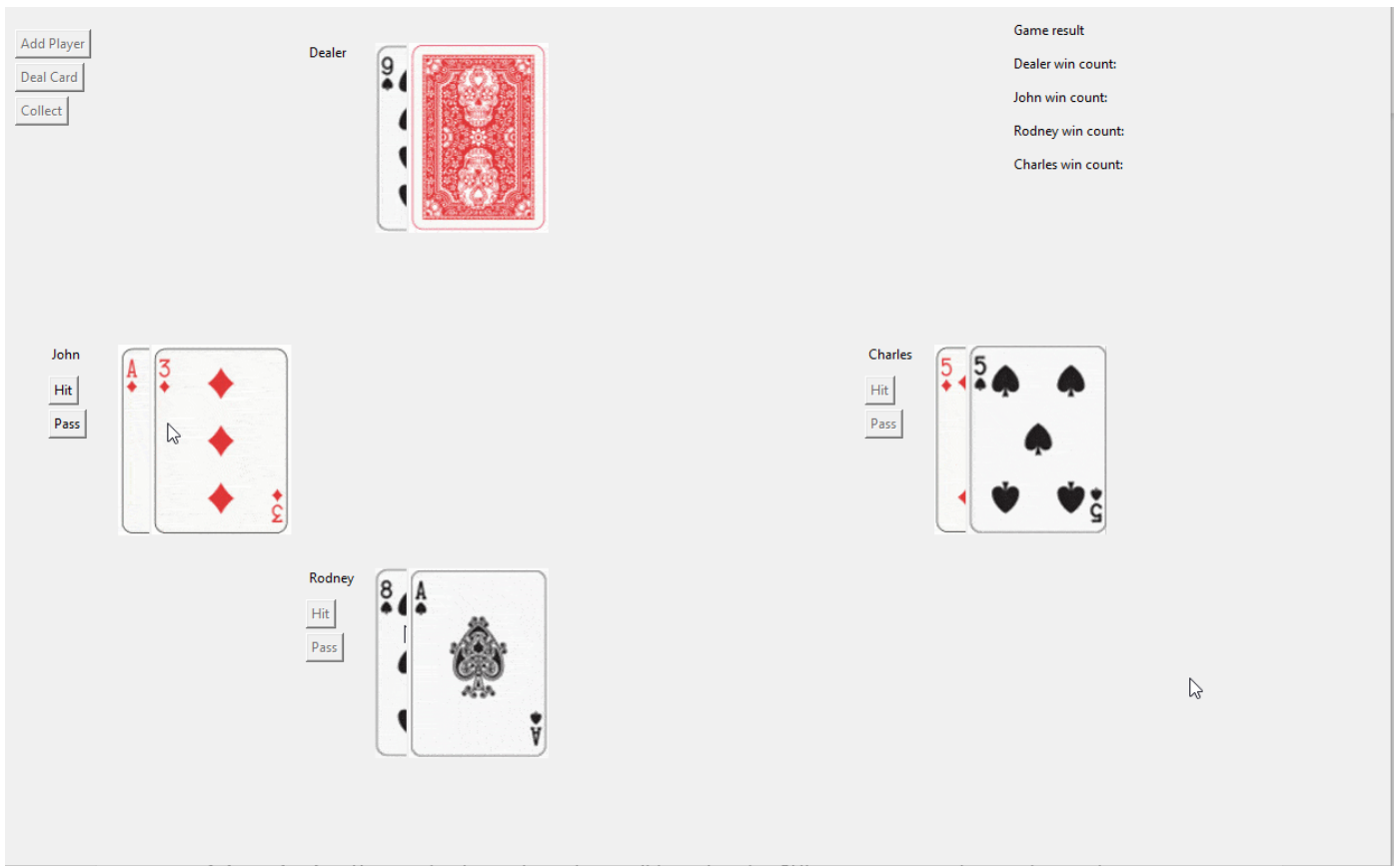
User Interface

- Initial window should look like the following:



where all button should be disabled other than **Deal Card** button.

- after deal two cards to each player, the screen should look like the following:



at this moment, Buttons for west player enabled, all other's disabled.