

# Blackjack

## How to Play

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### Objective

The goal of the game is to beat the dealer by having a hand value closer to 21 without going over.

### Getting Started

- Start the Game: Run the script to launch the application.
- Controls:
  - Make a Bet: Enter the bet amount when prompted and click the "Make a Bet" button.
  - Hit: Click the "Hit" button to receive an additional card.
  - Stand: Click the "Stand" button to end your turn and let the dealer play.
  - Restart: Click the "Restart" button to start a new game with the same or different bet.

### Gameplay

- Setting Up: The game deals two cards each to the player and the dealer. The dealer's second card is hidden initially.
- Making a Move:
  - Hit: The player receives an additional card from the deck.
  - Stand: The dealer reveals the hidden card and draws additional cards until the total is at least 17.
  - Outcome: The game checks if the player or dealer has bust (exceeds 21) or who has a higher hand value.
- Winning the Game: The game ends when either the player or dealer busts or when both have finished their turns. The player wins or loses based on the hand values compared to the dealer's hand.

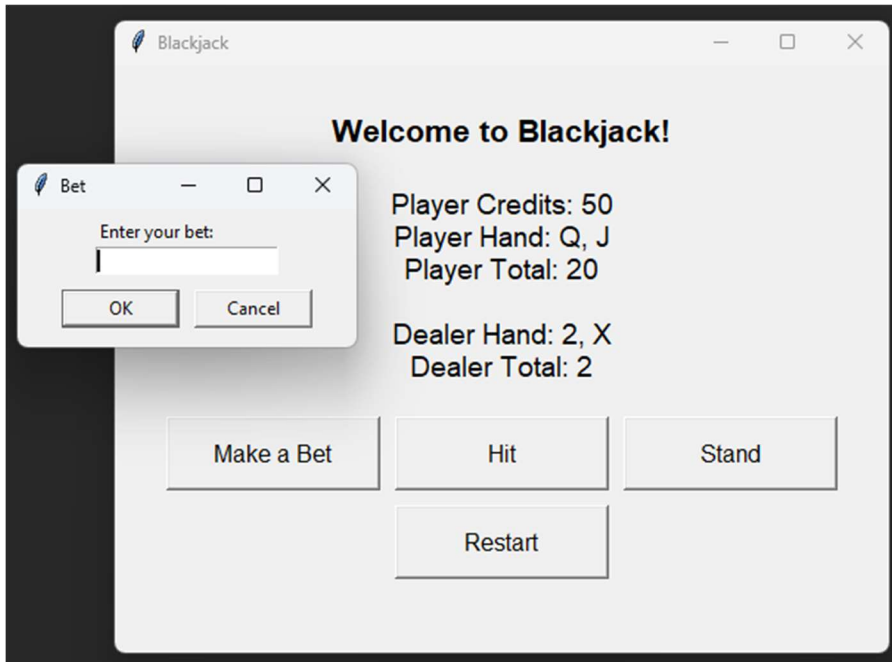
**Enjoy playing Blackjack!**

Blackjack Demo Link:

[https://drive.google.com/file/d/1\\_OCjxWSdWbHnHmgtesKsij-flrU4UAib/view?usp=sharing](https://drive.google.com/file/d/1_OCjxWSdWbHnHmgtesKsij-flrU4UAib/view?usp=sharing)

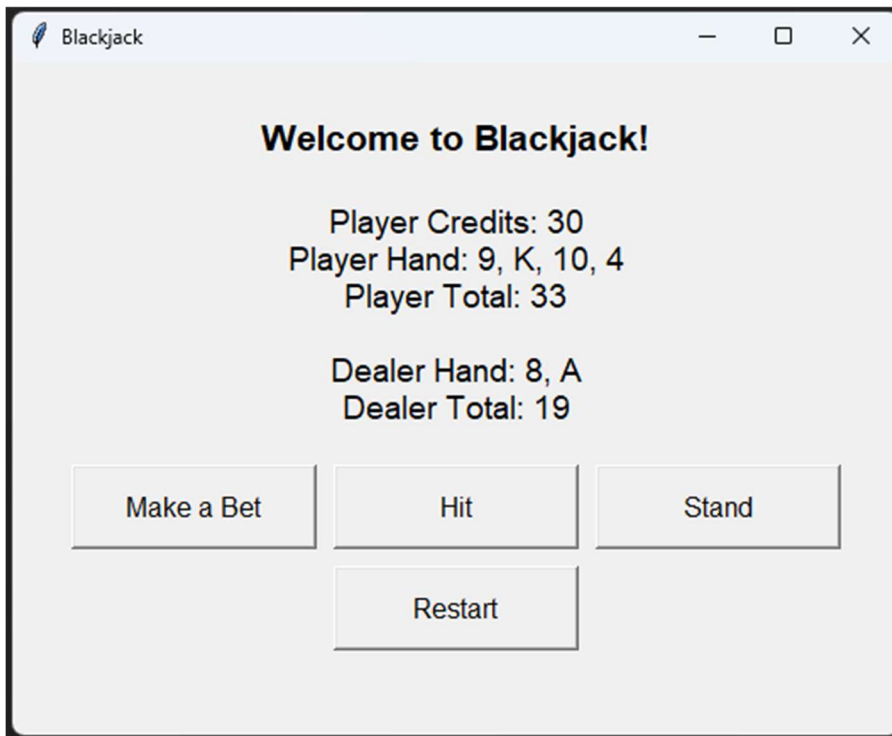
# Screenshots

## 1. Initial Game Screen



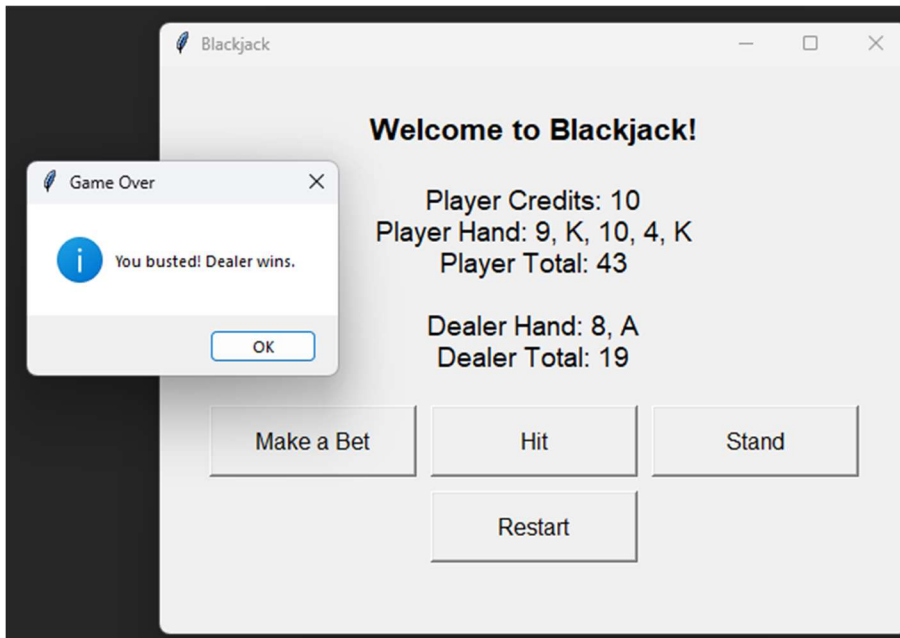
- Description: Displays the player's and dealer's initial hands, and available action buttons (Make a Bet, Hit, Stand, Restart)

## 2. Game in Progress



- Description: Shows updated hands with cards dealt, hit or stand actions reflected, and current game status.

### 3. Game Ended



- Description: Displays final hands of both the player and dealer, outcome message (win/loss/tie), and player credits update.

## Key Functions

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### BlackjackGame Class

1. `start_game()`: Initializes the hands for the player and dealer and starts a new round.
2. `player_turn(action)`: Handles the player's action (hit or stand), updates game state, and determines the outcome.
3. `make_bet(bet_amount)`: Sets the bet amount and starts a new game if the bet is valid.
4. `restart_game()`: Restarts the game by reinitializing the `BlackjackGame` instance.

### GameLogger Class

1. `log(message)`: Logs important game events such as game start, player actions, and game results.

### BlackjackGUI Class

1. `create_widgets()`: Creates and displays the game interface including labels and buttons.
2. `make_bet()`: Prompts the user for a bet amount, updates the game, and starts a new game.
3. `hit()`: Processes the player's request to hit, updates the game state, and checks for a bust.
4. `stand()`: Processes the player's request to stand, updates the game state, and determines the winner.
5. `restart()`: Restarts the game if credits are available or exits if credits are insufficient.
6. `update_info()`: Updates the visual representation of the game status including player and dealer hands.