

King Bomb A.K.A Wangzha

Beta Version

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0. Glossary:

0.1 Poker Table:

A poker table is where the game is played, typically accommodating up to 10 players and one dealer. Players are dealt cards here and place their bets.

0.2 Cards and Hands:

A standard 52-card deck is used. Hands range from High Card to Royal Flush. Each player tries to make the best five-card combination to win the pot.

1. Deck: A standard set of 52 cards used in poker, consisting of four suits: hearts, diamonds, clubs, and spades, each with 13 ranks from two to ace.
2. Hole Cards: The two private cards dealt to each player. These cards are not revealed until the showdown, if at all.
3. Community Cards: Cards placed face-up in the center of the table and shared by all players to form their hands in games like Texas Hold'em and Omaha.
4. Hand: The combination of cards held by a player, including hole cards and community cards, used to determine the winner of the round.

0.3 Positions and Roles:

1. Dealer: The player who shuffles the deck and deals the cards. In casino and online settings, a non-playing dealer does this job, but a dealer button still rotates among the players to determine the order of betting.
2. Small Blind: The position immediately to the left of the dealer. This player is required to post a small forced bet before the cards are dealt, which is usually half the size of the big blind.
3. Big Blind: The position two places to the left of the dealer. This player must post a larger forced bet before the cards are dealt, typically double the size of the small blind.

0.4 Betting Rounds:

Includes several stages depending on the variant:

1. Blinds: Mandatory bets (consisting of the "small blind" and "big blind") placed by the two players to the left of the dealer to initiate betting. The size of the blinds determines the stakes of the poker game.
2. Preflop: The first betting round which occurs after each player is dealt their hole cards, but before any community cards are revealed.

3. Flop: The second betting round, which happens after the first three community cards are dealt.
4. Turn: The third betting round, occurring after the fourth community card is dealt.
5. River: The final betting round, following the dealing of the fifth and last community card.
6. Showdown: After the final betting round, remaining players reveal their hands to determine the winner.

0.5 Betting Actions:

1. Ante: A preliminary bet required from all players before a hand begins.
 2. Call: Matching the current bet to stay in the hand.
 3. Raise: Increasing the bet amount, forcing others to either call the raised amount or fold.
 4. Check: Declining to make a bet while retaining the option to continue in the hand if no other bets are made.
 5. Fold: Opting out of the hand and losing any chance at the pot.
- All-in: Committing all remaining chips into the pot.

0.6 Hand Rankings

From highest to lowest, the possible hands are:

1. Royal Flush: The highest possible hand in poker, consisting of the ace, king, queen, jack, and ten of the same suit.
2. Straight Flush: Any five consecutive cards of the same suit (e.g., 9-8-7-6-5 of hearts).
3. Four of a Kind: Four cards of the same rank (e.g., four aces).
4. Full House: Three cards of one rank and two cards of another rank (e.g., three 8s and two 4s).
5. Flush: Any five cards of the same suit, not necessarily in sequence (e.g., ace, 10, 7, 4, 3 of diamonds).
6. Straight: Five consecutive cards of different suits (e.g., 9 of hearts, 8 of clubs, 7 of diamonds, 6 of spades, 5 of hearts).

7. Three of a Kind: Three cards of the same rank (e.g., three jacks).
8. Two Pair: Two cards of one rank, two cards of another rank (e.g., two 10s and two 8s).
9. Pair: Two cards of the same rank (e.g., two queens).
10. High Card: If no other hand is achieved, the highest card held counts.

0.7 Poker Variants:

Different styles of poker, each with unique rules regarding card dealing and betting.

1. Texas Hold'em: The most popular variant of poker where players try to make the best five-card hand using any combination of their two hole cards and five community cards.
2. Omaha: Similar to Texas Hold'em, but each player receives four hole cards and must use exactly two of them along with three of the five community cards to make their hand.
3. Seven-Card Stud: A poker variant where there are no community cards. Each player receives a mix of face-up and face-down cards, with multiple betting rounds.
4. Fighting the landlord(Dou Dizhu): Fighting the landlord is a popular Chinese card game for three players, involving a 54-card deck (including two jokers). One player, the "landlord," competes against two "peasants" trying to be the first to play all their cards through successive, increasingly higher card combinations. The game blends strategy and cooperation between the peasants to defeat the landlord.
5. 21 Point: 21 Point is a card game where the goal is to have a hand value closer to 21 than the dealer's, without exceeding 21.

1. Online Poker:

1.1 Usage scenario



(The images shown are for illustration purposes only and may not be an exact representation of the product)

1.2 Goals

The primary goal of the Poker game is to win chips by either forming the highest-ranking poker hand or strategically convincing other players to fold their hands. This involves a deep understanding of hand rankings, proficiency in bluffing, and adeptly managing one's chip stack through various betting rounds. Players must also be vigilant of their opponents' tendencies and strategies, adjusting their play style accordingly to maximize their chances of winning. The game culminates in either winning the pot by having the best hand at showdown or being the last player standing after all others have folded, thereby capturing all bets placed during the game.

1.3 Features

- The game follows classic Texas Hold'Em rules
- Online play with other players
- Ability to choose game size - 2 to 10
- Ability
- Computer players automatically fill empty positions
- Real-time Chatting
- Timer(TBD)
- Scoreboard(TBD)
- Other poker game variants(TBD)

2 Installation

2.1 System requirements

System Requirements	
RAM	512MB, or above
CPU	Intel Pentium, AMD K5, or better
Memory	2-3GB, or above
OS	Linux
Display	1024*768 screen resolution or higher
Network	Internet connection

2.2 Unpacking and configuration

Verify that the computer either runs on Linux or has a virtual machine that runs on Linux.
Download the software files and open the software.

Building, compilation, installation

1. Download Poker_V1.0_src.tar.gz*
2. Use command "tar -xvzf Poker_V1.0_src.tar.gz"
3. Use command "cd Poker_V1.0_src.tar.gz"
4. Use command "make"
5. Use command "cd bin"
6. Use command "./poker"

*Please note that the version of the software may vary

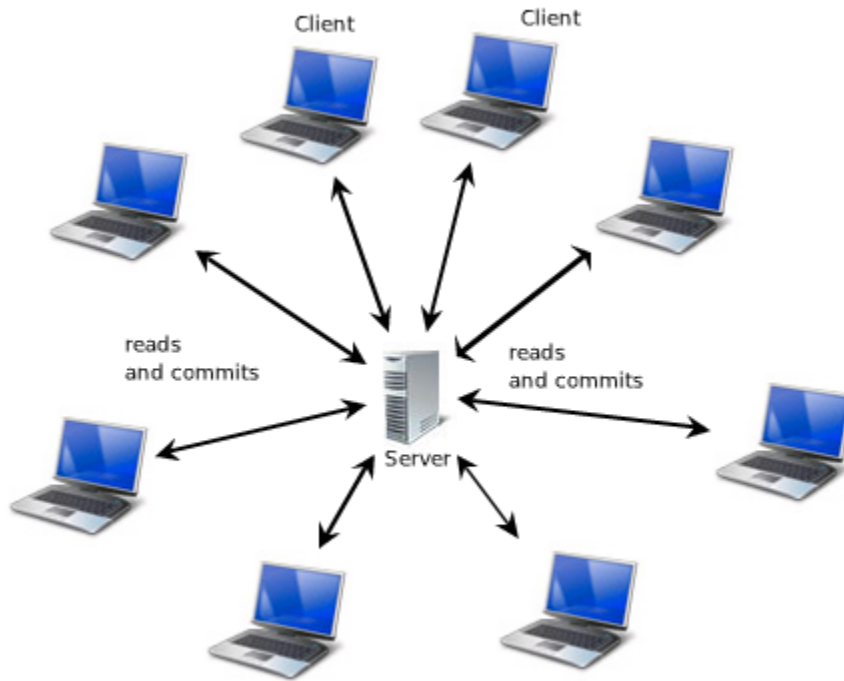
2.3 Uninstalling

Delete all the software files.

3 Program Functions and Features

3.1 Detailed description of client and server communication

- Diagram of programs and network communication with Poker clients and Poker server



1. Start the server program with a specific address, and specific how many players for this game
2. Start client programs to build connections with the server
3. After building the connection with all the players (client program), the game starts
4. The game proceeds by sending messages between client and server programs.

3.2 Detailed description of dealer choice and card distribution

- User input, program output, screenshot, etc.
 1. After the connection setup with the client and server. The game starts
 2. The initial will be chosen randomly at the start of play.
 3. Small blind and big blind player bet with $\frac{1}{2}$ minimum bet and 1 minimum bet
 4. Then, two cards are distributed to every player. Players start to bet.
 5. In the next rounds, three public cards will be flipped. Players start to bet.
 6. In the next rounds, one public card will be flipped. Players start to bet.
 7. In the next rounds, one public card will be flipped. Players start to bet.
 8. In the final round, the remaining players show their cards. Showdown.

3.3 Detailed description of poker game integration

- User input, program output, screen shot, etc

Just joined the game:

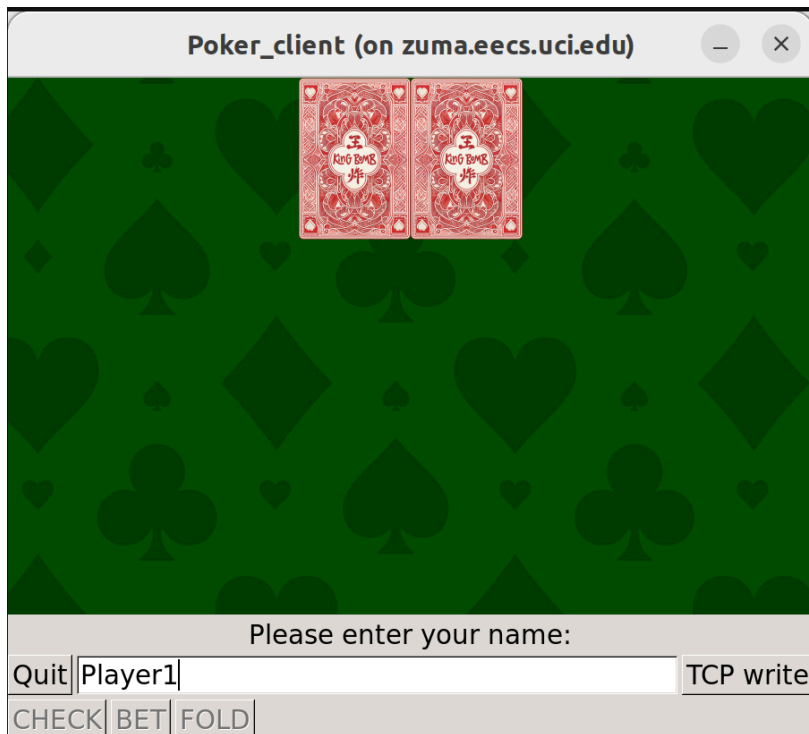
"You have connected to the server, waiting for other players"

Game starts:

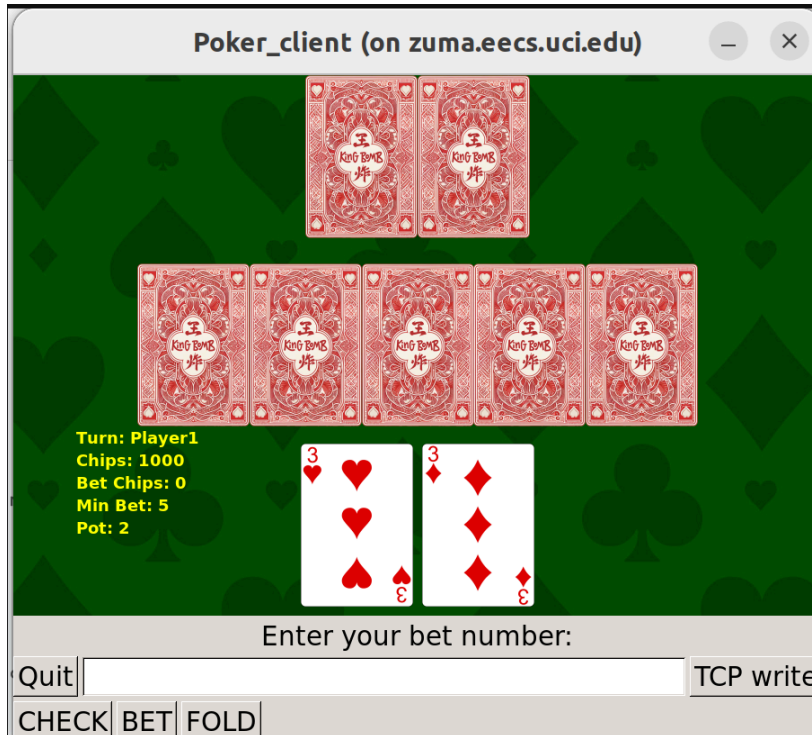
"All players ready, let's begin!"

During the game:

Gameplay:



- Available inputs:
 - Player name
 - Click CHECK for check
 - Click FOLD to fold
 - Click BET and enter the bet number on text entry to place a bet
 - Click TCP write to send the message to server



Game status update:

- Players will be updated with other players' actions

Example:

Received data: UPDATE_STATUS: player Player1's turn, player minimum bet: 5.
pot: 2.

print_msg3: The game is for 2 players, minimum bet is 5 and your position is 1.

What is your name?

print_msg2: You have auto bet 2 since you are Small Blind

print_msg1: UPDATE_STATUS: player Player1's turn, player minimum bet: 5.
pot: 2.

4. Back matter

4.1 Copyright

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4.2 Error messages

1. Invalid Command: "Please enter a valid command (e.g., bet, call, raise, fold)."

2. Insufficient Chips: "You do not have enough chips to make this bet."

3. Invalid Bet Amount: "Your bet amount must be within the minimum and maximum allowed for this game."

4. Invalid Raise: "Your raise must be at least twice the minimum bet or the last raise."

5. Connection Error: "Failed to connect to the server. Please check your internet connection and try again."

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