

# Five Aces

## V1.0 Release



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# Glossary

## A

*All-in* - Committing all of one's chips into the current pot. This is used when a player is short on chips but wants to participate until the end.

## B

*Blinds* - Mandatory bets (usually two) that create starting pot stakes. The two players to the left of the dealer post the small blind and big blind.

## C

*Call* - To match the current highest bet on the table. Players must call to stay in the hand without raising the stake.

*Check* - A betting action representing no bet; possible only when no bet has been made in the current betting round. If all players check, the round continues without additional bets.

## D

*Dealer* - The person responsible for distributing the cards and managing the action at the poker table. In casino poker, a professional dealer handles the cards, but in home games, players often take turns being the dealer.

## F

*Flush* - A hand which has all cards of the same suit.

*Flop* - The first three community cards dealt at once after the first round of betting. These cards are used by players to make their hands.

*Fold* - When a player decides not to match the current bet and instead gives up their hand, forfeiting any chance to win the pot in that round.

*Four of a Kind* - A hand consisting of four cards of equal value along with another card known as a side card.

*Full House* - A hand consisting of three cards of one value and two cards of another.

## H

*High Card* - Five cards that do not interact with each other. Your highest card will be counted.

## P

*Pair* - A hand consisting of two cards of the same value, and three extra cards.

*Pot* - The total amount of all bets made during a hand. The pot goes to the winner or is split in case of a tie.

## R

*Raise* - To increase the size of the current bet. A raise must at least match the amount of any previous raise in the round.

*River* - The final (fifth) community card dealt in games like Texas Hold'em and Omaha. It's followed by the final round of betting.

*Royal Flush* - The best hand possible, a royal flush consists of A, K, Q, J and 10, all of the same suit.

## S

*Showdown* - The final act of a poker hand in which the players reveal their cards to determine the winner. This occurs if there are two or more players remaining after the final betting round.

*Straight* - A hand of 5 consecutive cards of the same value that are not all the same suit.

*Straight Flush* - A hand consisting of any straight that is all the same suit.

*Suit* - A card suit is one of the categories into which the cards of a deck are divided, most commonly spades, hearts, diamonds, and clubs.

## T

*Texas Hold Em* - A variant of poker where each player is only dealt 2 cards. The dealer instead deals 5 community cards in the middle where each player can choose to build their 5 card hand with 3 of them.

*Three of a Kind* - A hand consisting of 3 cards of the same value and 2 side cards of different values.

*Two Pair* - A hand consisting of two cards of equal value, another two cards of equal value, and one extra card.

*Turn* - The fourth community card dealt after the flop. It is followed by another round of betting.

# 1 Online Poker.

## 1.1 Usage scenario.

The intended usage scenario of this Five Aces poker program is for someone who wants to play a casual game of Poker with their friends online. This poker program will offer a fun experience for anyone who desires to pass the time and enjoy a game of poker with their friends.

Below is an imagined form of the UI. The GUI will provide a layout of the table for the user to interpret the game as well as the other players. The table will display the community cards in the middle along with the cards of the other players. There will be buttons to indicate whether the user wants to call, raise, check, fold, or all-in. There will be a scoreboard where the user is able to see how many points they have, since there is no gambling.



Figure 1: Sketch of the pokerboard

## 1.2 Goals.

The goals of this engine should be to provide a fun experience for the user and their friends. The user should be able to clearly describe what they want using the buttons of the program and the game should be able to provide for their desires without major interruptions in their experience. The engine also sets itself on a standard to prevent bugs, or even crashes that could hurt the user's enjoyment and experience with the poker game.

The goal of the user should be to be able to play poker with friends who are not around them and play it online. The user should be able to have fun and not worry about losing any money when playing poker.

### 1.3 Features.

The features included in the Five Aces poker program are:

- Playable Poker online with friends
- The ability to choose your seat, should show their name in that seat
- Server that keeps track of your points
- Server that deals cards
- At least one bot player that can join a seat
- An indicator/helper to tell you your highest hand
- Buttons that show players options (fold, check, call, all-in, raise, show hand)

The user will be able to choose a seat and name when they first join the lobby. There will be a ready button to indicate when the game will start. The server will be the dealer and consistently deal out cards, end the game properly, and award points accordingly. The user will be able to use the buttons on screen to decide what they want to do given their hand. If an illegal move is made, such as an attempt to raise the pot with an illegal amount, they will be informed to re enter a new value. The user will also be able to all-in with their points. The user will also be able to choose what type of poker (Texas Hold'em, Omaha, etc) they will play before entering a lobby. The other players would have to choose the same gamemode to be put in the same lobby as their friends.

## 2 Installation.

### 2.1 System requirements.

The recommended system requirements are:

- OS: Linux (64 bit)
- Processor: Anything that can run at at least 2 GHz
- Memory: 2 GB of RAM
- Graphic Card: Integrated graphics or dedicated GPU with basic capabilities

### 2.2 Setup and configuration.

The developer must have access to a machine running Linux OS or access to a server with Linux OS installed on it.

- The chess program is inside the '**Poker\_V1.0.tar.gz**' file that contains all the source files needed to run the program.
- They can extract the archive by running "**gtar xvzf Poker\_V1.0.tar.gz**".
- Go into the source file directory by using "**cd Poker\_V1.0**".
- Copy the bin folder inside this directory anywhere on your system.
- The program should be an executable called "**poker.exe**" and make sure there are .dll files present to run the GUI.

### 2.3 Uninstalling.

The program can be uninstalled by heading to the directory where the files extracted from 'tar.gz' file reside. Delete everything in this directory. Then, delete the 'tar.gz' file.

## 3 Poker Program Functions and Features.

### 3.1 Detailed description of client and server communication

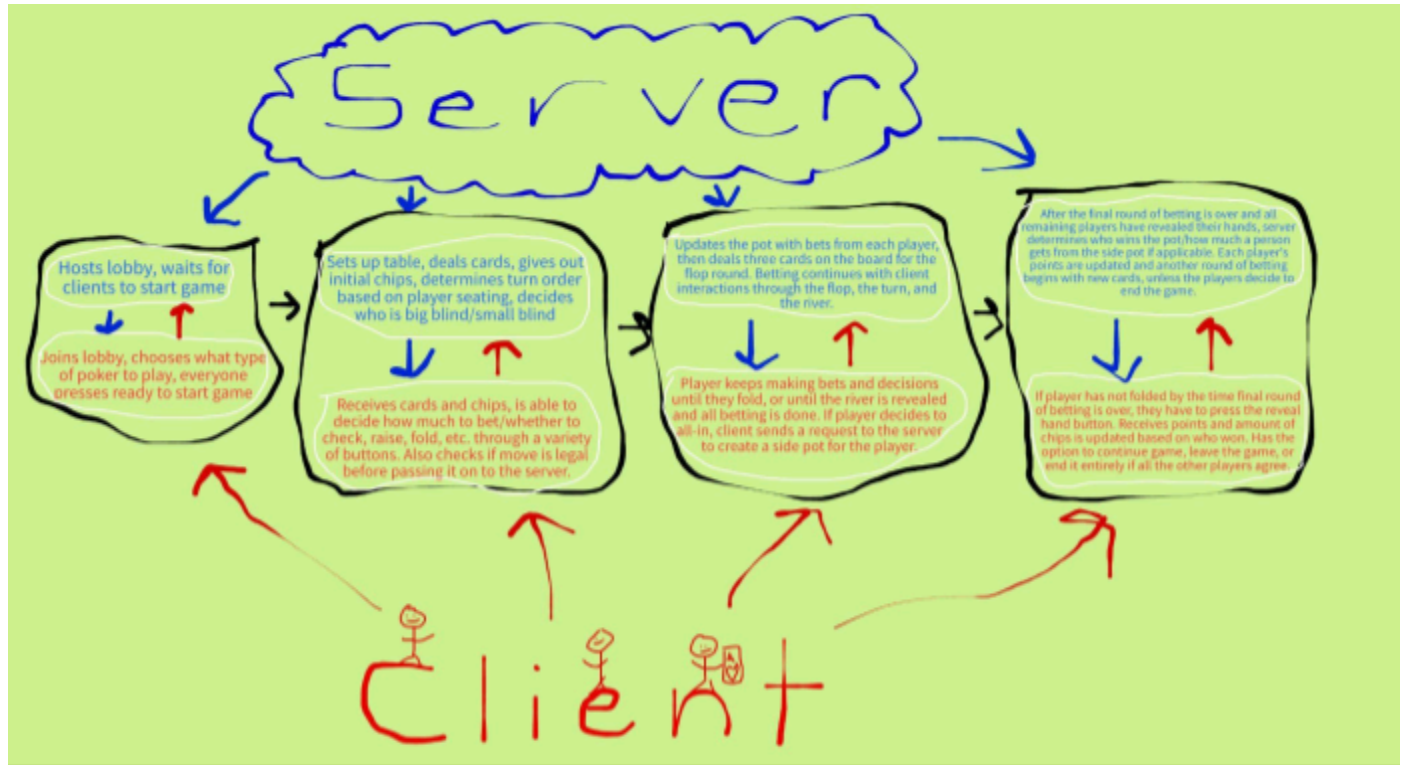


Figure 2: The High Level Structure of the Functioning Program

The server and client communications will be handled by having the server be up and the client to send requests to start a game. The server will verify that the request is valid then send a confirmation to the client. After a confirmation is received, the server will then set up the game and have the client and other clients, if available, join the game after a brief period of time. If there are not enough clients available, the server will use bots that act as clients to fill in for the missing spots. Each player can then use the GUI to click on button prompts that send further requests to the server based on the decision they made. The server will then update the game state and send a response to the player client's program and subsequently their GUI to reflect this change. The server will also be able to track whether a client is inactive or has closed their window and will either end the game if they are the only player or replace their moves with a bot. This can be visualized by having the server act as the casino, poker table, and the dealer all at once. The clients come into the server or the casino and ask for a game of poker. The server then takes them to a poker table, which is the game, and sets them up with other players. The server then acts as the dealer to track the game's state and verify scores and choices made.



### 3.2 Detailed description of dealer choice and card distribution

The server will always be the dealer, and each round the cards will be distributed to the players randomly from a standard deck of 52 cards. The 52 cards will be stored in a list and the dealt cards will be removed from the list to prevent any player from receiving duplicates. Each player will also contain their own list of cards to handle scoring at the end. Since the dealer will always be handled by the server, there will not be any user input for the dealer. As for now, dealer's choice will not be implemented as there is only one gamemode that is planned to be implemented.

#### Output

The output for the dealing will be handled on a GUI and through messages to relay the cards to each player. The GUI will display each player's own cards as well as the currently revealed community cards. For simplicity's sake, there is no plan for any dealing animation or card flipping. The cards will instantly appear in the spots they should be in. While the cards are hidden from the player during dealing, the server knows the values of each card it deals initially, except for the two cards that will be revealed later in later rounds.

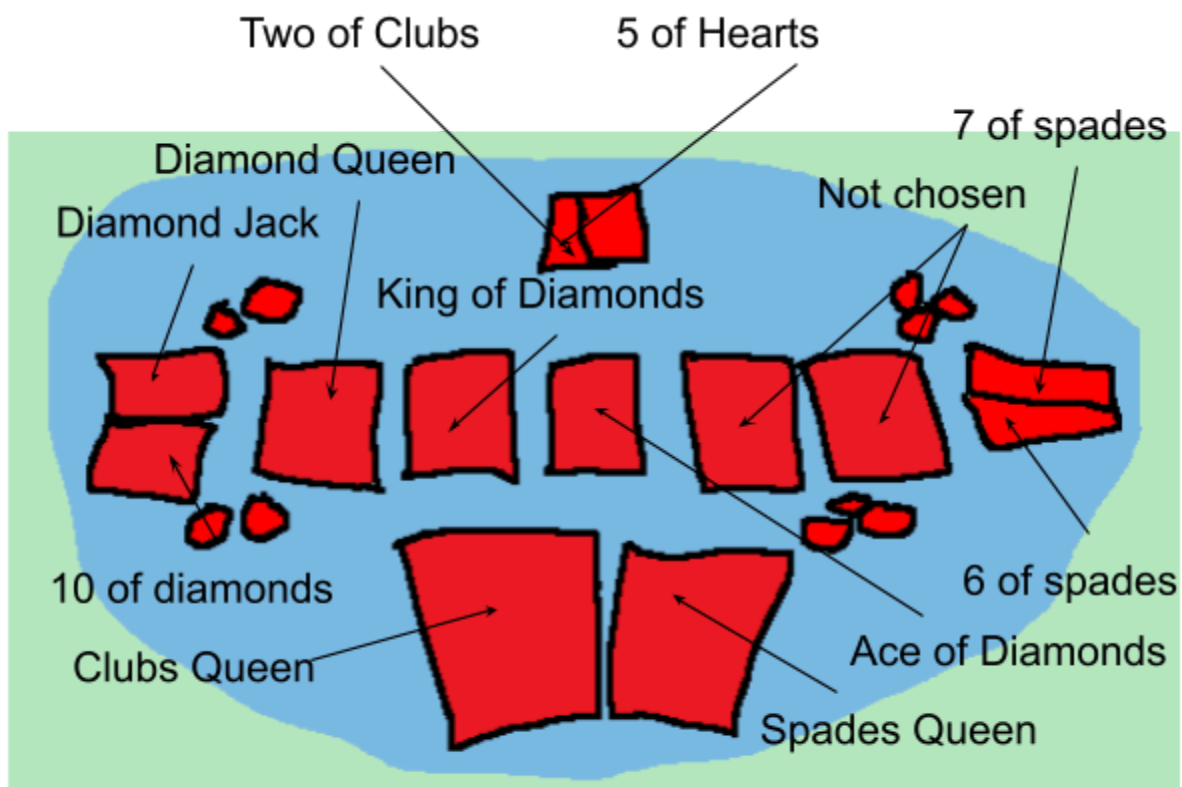


Figure 3: Card Distribution after Dealing

### 3.3 Detailed description of poker game integration

The Poker game will be integrated with the system above. While the server and program will process the functions of the game, the individual game aspects will also have their own mechanics. The CPU players will not receive a GUI of any kind.

#### User input

User input will be handled through the use of clicks on a GUI. This will allow the user to set a bet, call, raise, or fold based on buttons on the screen.

In the program itself, the input will be handled through an event handler which will wait for inputs from the user and check whether the input is within the confines of a certain button or not.

#### Output

The output for the player will also be handled on a GUI. The GUI will primarily display the player's own cards as well as the community cards in the middle. The player can also see the bets of the other players as well as the hands they have during the showdown.

The GUI output will be done in GTK 2.0 and will display a window for the player to interact with.

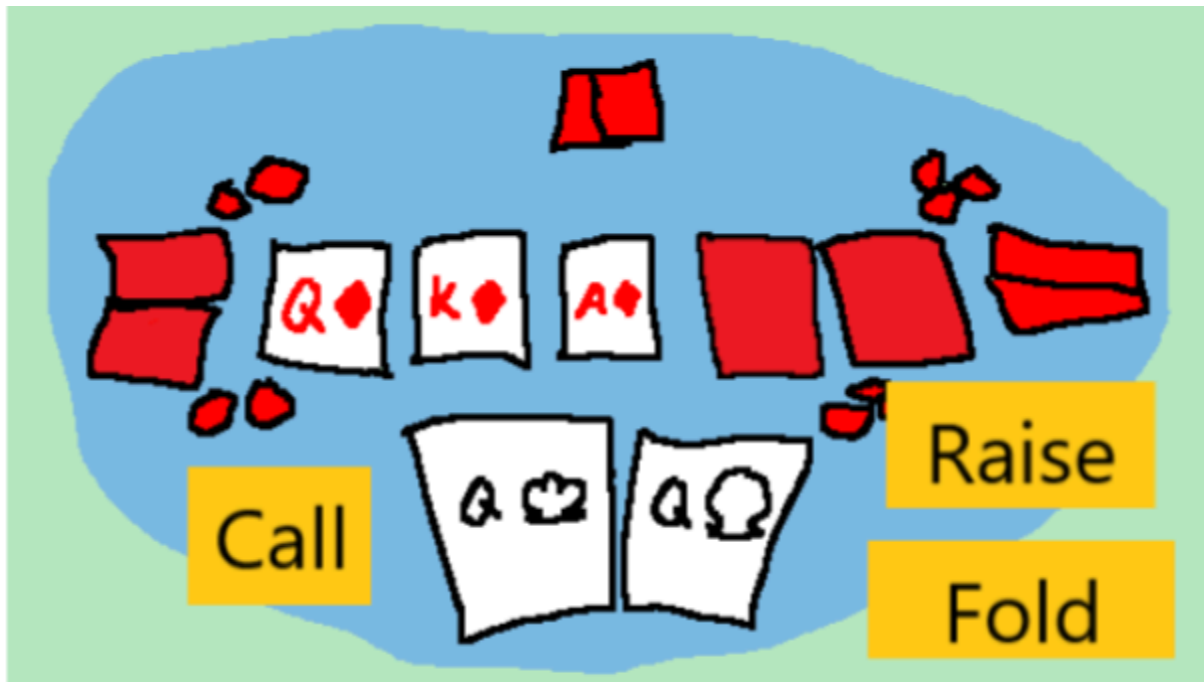


Figure 4: GUI Options

## Backmatter.

### Copyright.

The Five Aces Poker Program is a product of University of California, Irvine Irvine, CA 92697, United States.

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### Error Messages.

Illegal Bet Error: You cannot bet this much right now. Please bet a different amount, or make another move. (*This can occur while calling or raising*)

Illegal Check Error: You cannot check right now. Please make another move.

Illegal Parsing Error: The input entered was unable to be processed or was not applicable to the prompt. Please reread the prompt or enter the input in a different way.

Invalid Time Error: The time for the timer that was entered was too low or invalid. Please enter a larger amount of time.

System Setup Error: The Engine was not able to set up properly. Please refer to the Installation part of the manual to attempt to troubleshoot or Uninstall then Reinstall the program.

Save Error: The game state was not able to save properly. Please ensure there is enough memory.

Invalid Setup Error: The user attempted to play a variant of poker that is not available. Please choose a valid option.

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