

# The Best Chess Game Ever V2.0

Version 1 (Chess User Manual)

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# Glossary:

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**Bishop:** May only move diagonally as many squares as long as the pathway is not blocked.

**Castle:** A special move which involves moving the king and rook simultaneously. This will be the only time where two pieces can be moved in the same turn. There exists two types of Castle:

-*Castle Long: Queenside Castling*

-*Castle Short: Kingside Castling*

Both types of Castling consist of moving the King two squares either right or left depending on the type of Castling, and moving the rook on the square besides the King closest to the center. Keep in mind that this move can only be done if there are no other chess pieces in between the King and Rook, if neither pieces (King and Rook) have already moved, and if the King does not move out of a Check, into a Check, or over a Check. This special move allows the King to be in a safer position while giving the Rook a powerful position in the middle of the board.

**Check:** the act of attacking the opponent's King. When in Check, the player can call out "Check" to inform his opponent of the threat. In this case, the opponent must either move his King in a safe square, capture the attacking piece, or move another piece in between the King and the attacking piece.

**Checkmate:** the act of attacking the opponent's King such that it cannot escape by any means. The game is then over, and the attacking side wins.

**Client:** Service requester. In this application, the user is a client.

**En Passant:** from the French term "in passing". This move only occurs after a pawn moves two squares from its starting position, and passes an enemy pawn. The enemy pawn then has the opportunity to capture the passing pawn as if it had only moved forward one square. The right to capture "en passant" must be made immediately during the next move by the enemy's pawn, or else it will be lost in the following moves.

**Fork:** an attack where a piece threatens two or even three enemy pieces at the same time.

**IP Address:** An Internet Protocol address is a unique numerical label assigned to each device connected to a computer network that uses the Internet Protocol for communication.

**King:** Can only move 1 step in the surrounding squares.

**Knight:** May only move in the shape of a 'L'. For example, 2 steps forward and 1 step right.

**Pawn:** For each pawn, the first move may either be 1-2 steps forward. After the first usage of that Pawn, they may only move 1 space forward at a time. The Pawn may also move diagonally forward 1 step to capture the opponent's piece.

**Port Number:** A 16-bit unsigned integer ranging from 0 to 65535 to identify each process or application on a computer.

**Queen:** Can move 1 step in the surrounding squares. Can also move vertically, horizontally, and diagonally as many spaces as long as the pathway is not blocked.

**Rook:** May move vertically or horizontally as many squares in the horizontal or vertical direction as long as the pathway is not blocked.

**Server:** Service provider which stores the information of all users and responds to clients' requests.

**Support:** The name of the server in the user interface.

# 1: Instant Messaging

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## 1.1. Usage Scenario

After installing the application, the user will be asked to either log in or sign in depending on if an account was already created.

The Best Chess Game Ever

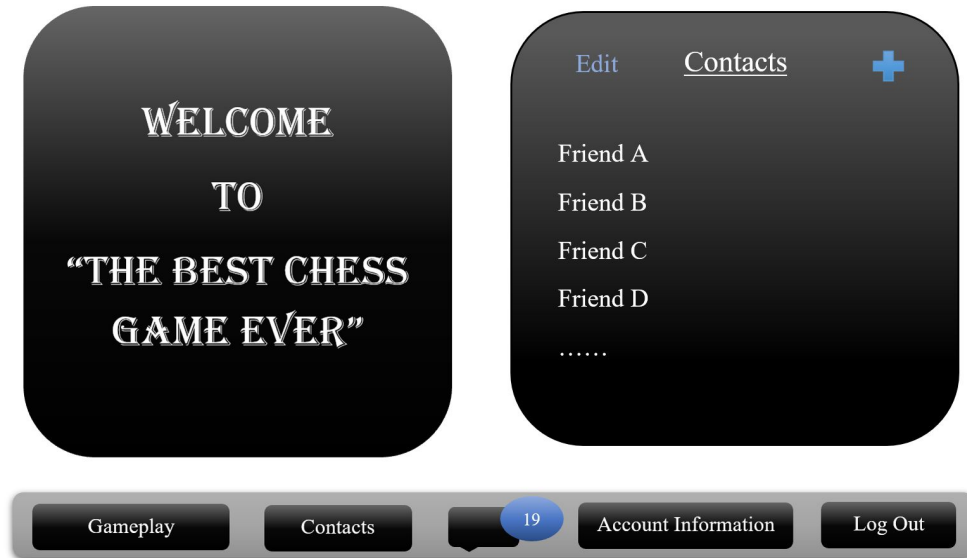
Login ID:

Password:

Login Sign Up

A login and sign-up screen for an application titled 'The Best Chess Game Ever'. The screen features a dark, rounded rectangular box with a light blue shadow. Inside the box, the title 'The Best Chess Game Ever' is displayed in a serif font. Below the title, there are two labels: 'Login ID:' and 'Password:'. Below the box, there are two buttons: 'Login' and 'Sign Up', both with a light gray gradient and rounded corners.

Once logged in, the user will be able to interact with a user friendly and easy to use interface by choosing between *Gameplay*, *Contacts*, *Messages*, *Account Information*, and *Log Out*. The user will be able to remove and add contacts at any time, see unread messages as well as send messages, start a chess game against one of its contacts, see all their account information such as name, password, or even IP address, and finally log out whenever desired.



## 1.2. Goals

We want to provide online users a multiplayer instant messaging (IM) experience where they can connect and chat with others and engage in player vs. player chess matches. The Chess matches and the IM interface will be user friendly and to guarantee a smooth and fun experience.

## 1.3. Features

### Instant Messaging Chat Features:

- Use Registration and Login
- Add Requesting and Deleting Users from Contacts
- Protected Login Information Only Accessible to the User
- Ability to Play Chess Against Any User from Contacts Upon Approved Request
- Account Information and Status Management for the User
- Check Contacts Online Status
- Customize Font and/or Color for GUI
- Save and Pull up Conversation History/Log
- Message Seen/Unread Status

### Chess Game Features:

- Different Game Modes: Player vs Player or Player vs CPU

- Team Option: Black or White
- Activity Log
- Undo Function (Only Player vs CPU)



## 2: Installation

---

### 2.1. System Requirements (Minimum)

OS:	Linux with Display Managers Compatible with X11 and SDK/GTK
Processor:	2 GHz Intel Dual-Core Processor
Memory:	900 MB Available
Graphics:	Video Card with at least 1GB VRAM and Supports Shader Model
Storage:	1 GB Available

### 2.2. Setup and Configuration

The chess software will be compressed into a package with the extension “.tar.gz”. To untar please type:

```
gtar -xvzf Chess_V2.0.tar.gz
```

Please read the provided documentation before continuing with the installation process by typing:

```
vim INSTALL
```

Please type the following to run the package:

```
cd bin
```

```
./Chess2.0
```

### 2.3. Uninstalling

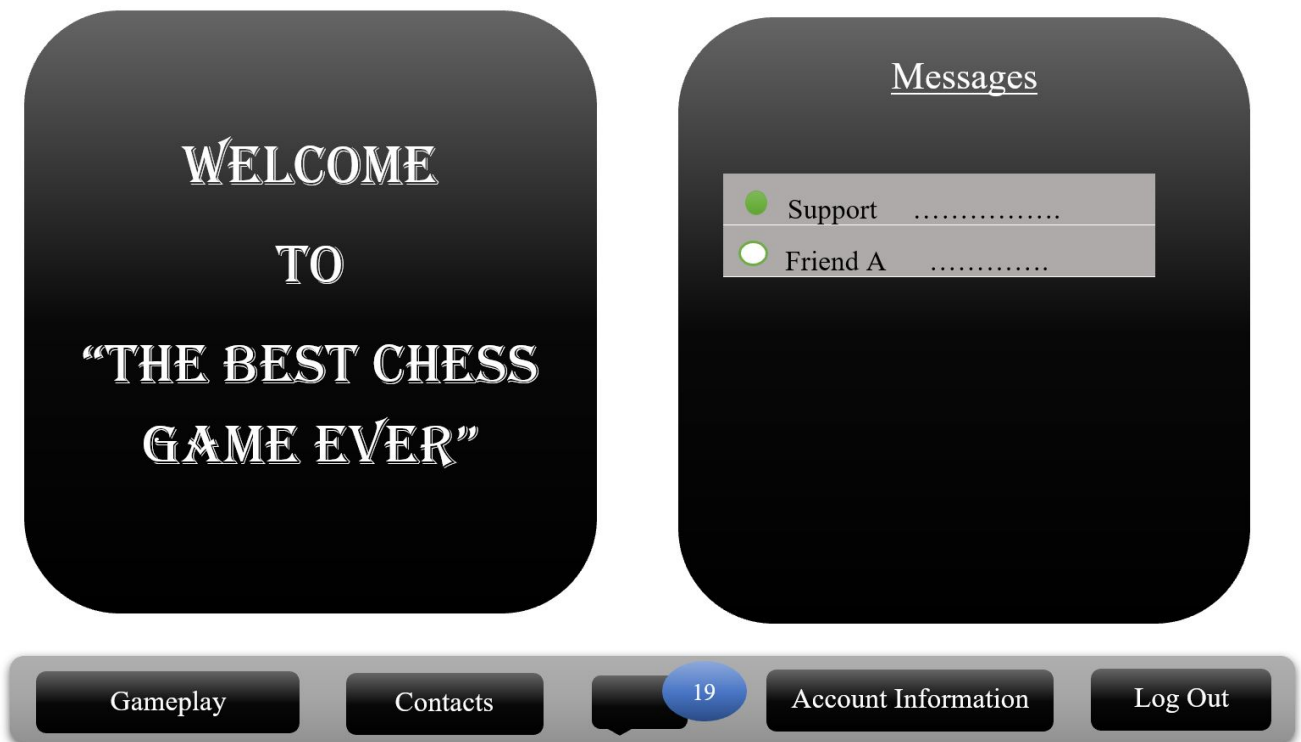
To uninstall the software, please type the following to remove all of the downloaded folders:

```
make clean
```

## 3: Chat Program Functions & Features

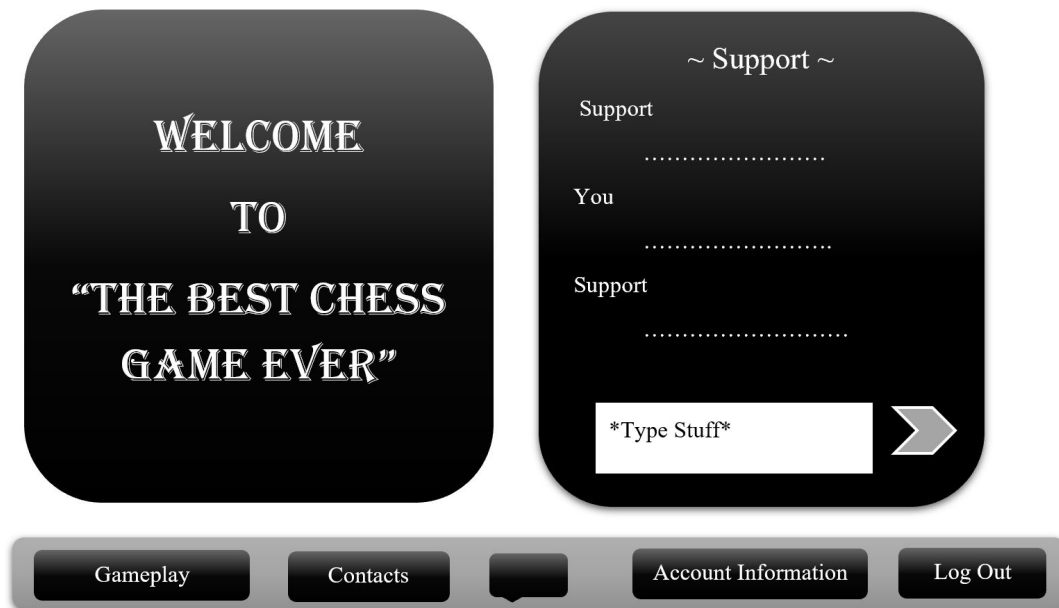
### 3.1 Client & Server Communication

*\*Messages tab\**



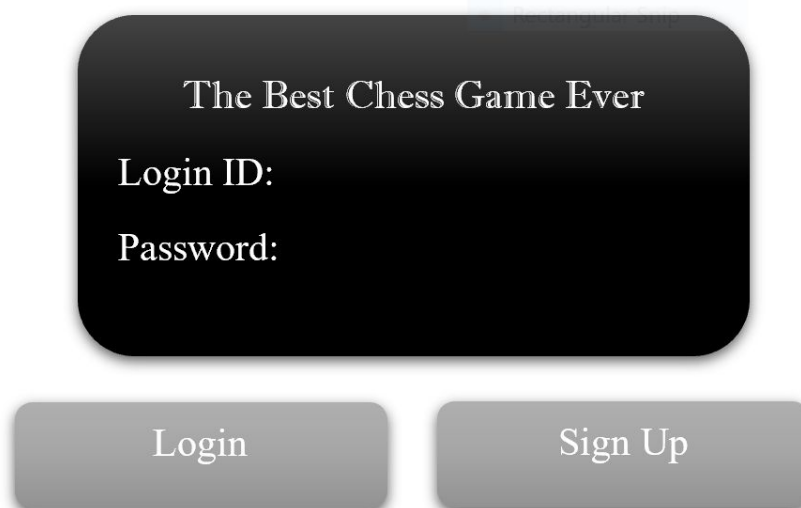
The client and server communication will be under messages where the server will be named Support. The green closed circle symbolizes unread messages. The green open circle symbolizes read messages.

*\*Messaging between Client and Server\**



After the user clicks the Support messages, the right side will change into the messages between support and the user.

### 3.2 Log in to the User App



In the beginning of the application for the chess game, the user will see a page where they may enter a Login ID and Password. The user has the option to click Login if they have a registered account or Sign Up and register an account.

### 3.3 Register with the Provider

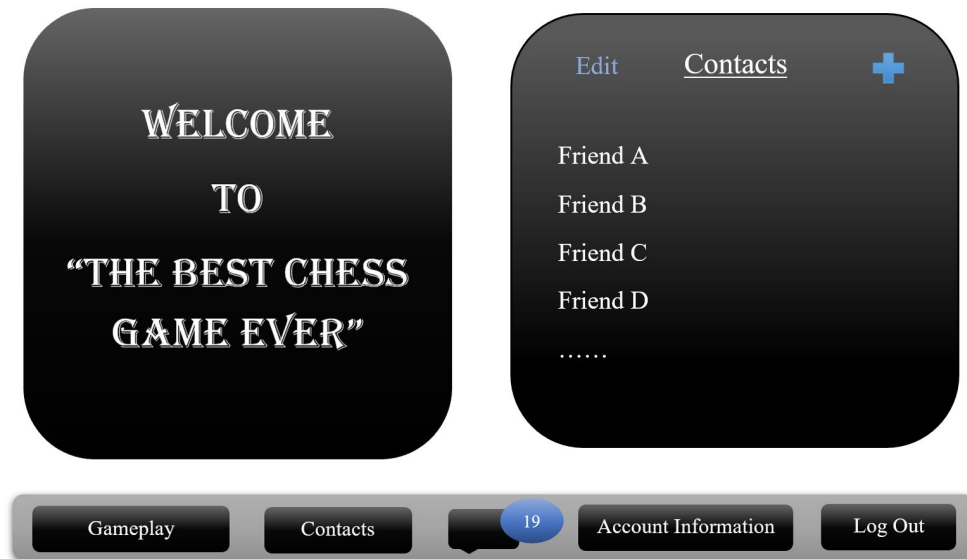


The image shows a registration form titled "Registration" in a dark, rounded rectangular box. Below the title, there are six input fields labeled "First Name:", "Last Name:", "User ID:", "Password:", "IP Address:", and "Port Number:". Below the form box is a "Sign Up" button.

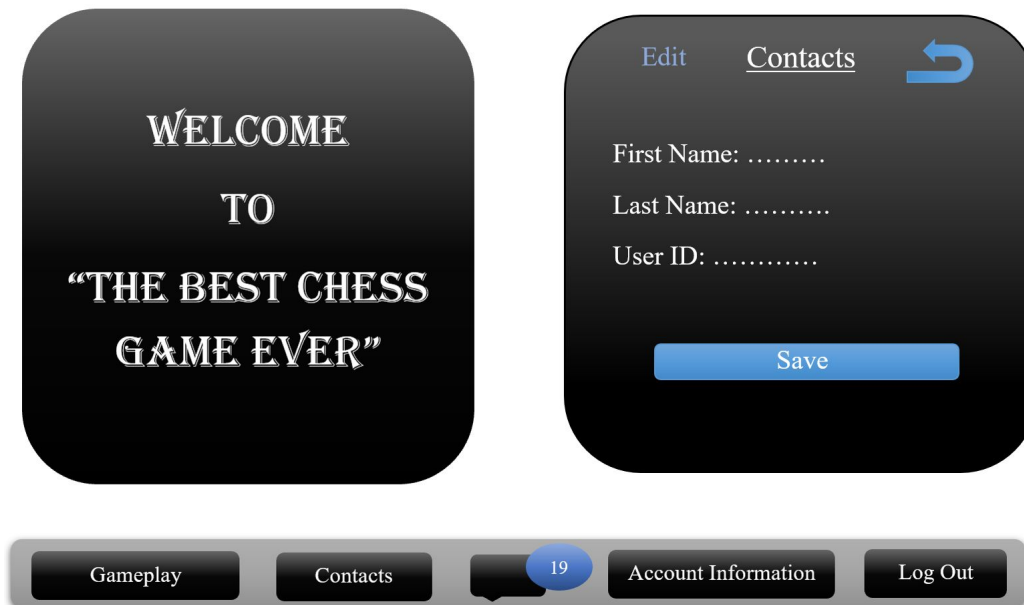
After clicking the button to Sign Up on the home page, the user will be moved to another page to register their account. On this page, they may enter their first name, last name, user ID, password, IP Address, and Port number. Once they complete this form, the user may click the Sign Up button. The user will then be moved back to the home page for them to login.

### 3.4 Adding Other Users to Contacts

*\*Contacts Tab\**



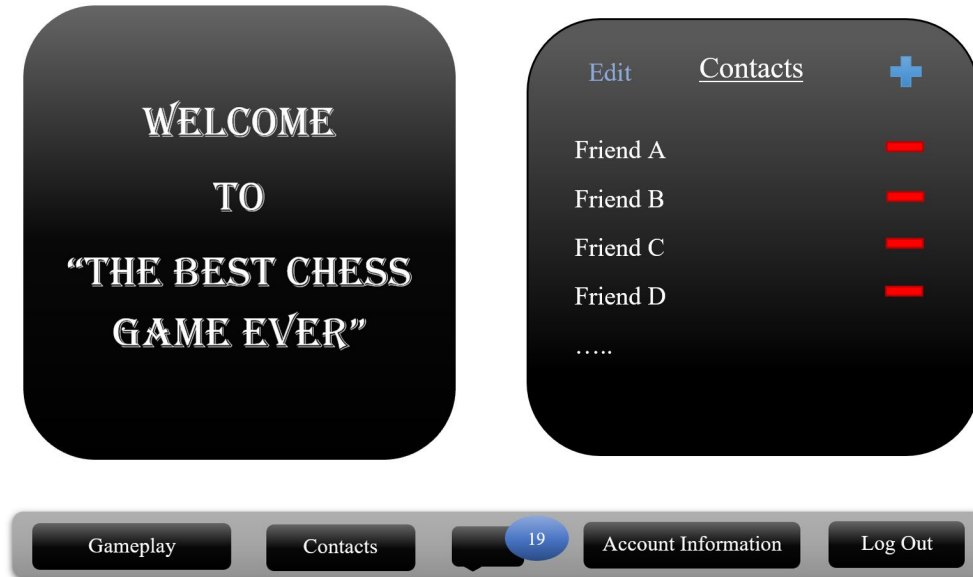
If the user would like to add someone into their contacts they can do so by first going to the contacts tab. Once they are in the contacts tab they will see a list of all of their current contacts. To add a new person to their contacts the user must click on the plus sign in the top right corner. After that they will be taken to the page shown below.



Once the user clicks on the plus sign they will be prompted to enter the first name, last name, and user ID of the user they are trying to add to their contacts. Finally click save and now that user will be added to their contact list. To go back, the user can click the back arrow.

### 3.5 Deleting Users in Contacts

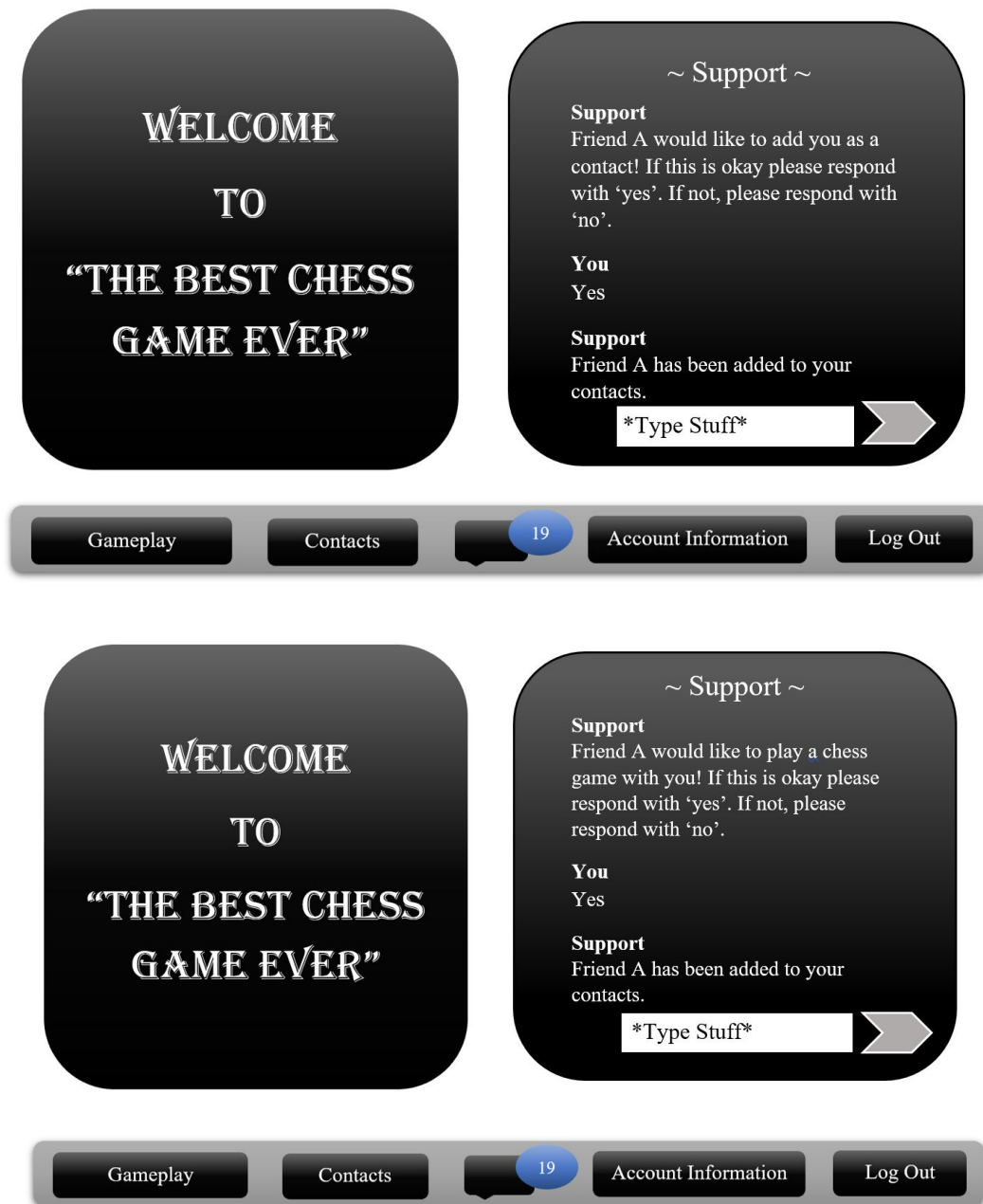
If the user would like to delete someone from their contacts they can click the edit button in the top left corner of the contacts page. If they click edit then red minus signs will appear next to each person's name in the contacts list. As shown in the picture below.



If the user clicks on the minus sign next to a name then that contact will be deleted from the contact list.

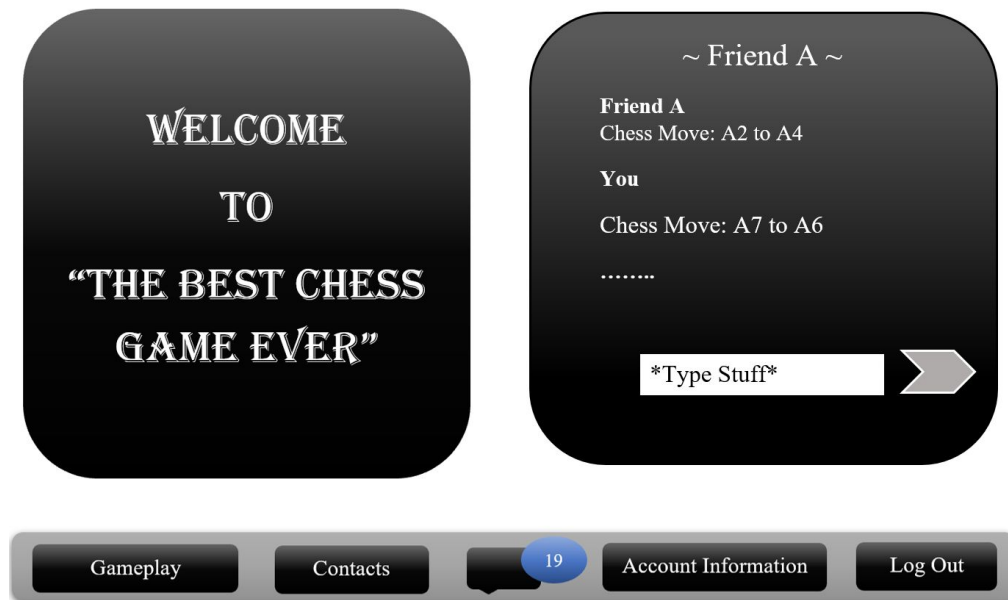
### 3.6 Requests from Other Users

If another user wants to add the other as a contact or request to play a game with them then the user will receive a message from support. The message will say “ \*insert name here\* would like to add you as a contact! If this is okay please respond with ‘yes’. If not, please respond with ‘no’.” The message could also say “ \*insert name here\* would like to play a chess game with you! If this is okay please respond with ‘yes’. If not, please respond with ‘no’.” The screenshots below show both scenarios.



### 3.7 User's Request with Necessary Data

When the user makes a move in chess, the other player will receive a message with the move the user made in the form of "A2 to A4". The board that the other player sees will also be updated to reflect the current status of the board. When the other player then makes their move, the user will receive the same type of message.



```

  A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4| P |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2|   | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
  A B C D E F G H

~ Round 1 ~
  Black
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): a7 a6
Incorrect Format! Please try again

```



### 3.8 User Account Information & Status

**WELCOME  
TO  
"THE BEST CHESS  
GAME EVER"**

User Information

First Name: .....  
Last Name: .....  
User ID: .....  
Password: \*\*\*\*\*  
IP Address: .....  
Port Number: .....

Status

Gameplay   Contacts   19   Account Information   Log Out

The user may click the Account Information on the bottom of the application, then the user's account information will show up on the right side of the application. In the Account Information page, it will display the user's first name, last name, user ID, password, IP Address, and Port Number. Underneath the User Information, there will be 3 buttons: available, idle, and busy. The current status of the user will be the blue selected button.

### 3.9 Checks for New User Sign-Up & Accepts Existing User Log-in

If the user tries to sign-up/register with a user ID that already exists or tries to login with the incorrect information (i.e. incorrect user ID or password) then an error message will appear. If the user tries to sign-up/register with a user ID that already exists then the message “That user ID is already taken. Please pick a different one.” will appear. If the user tries to login with an incorrect user ID or password then the message “Incorrect login information. Please try again.” will appear.

Registration  
First Name: .....  
Last Name: .....  
User ID: .....  
Password: .....  
IP Address: .....  
Port Number: .....  
  
That user ID is already taken.  
Please pick a different one.

Sign Up

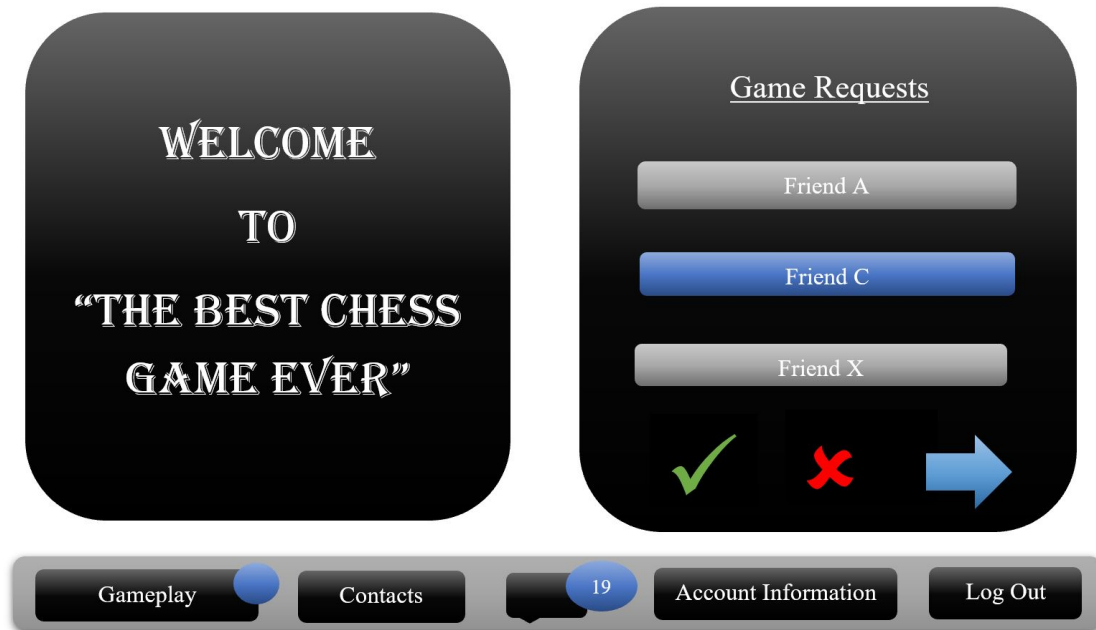
The Best Chess Game Ever  
Login ID: .....  
Password: .....  
  
Incorrect login information. Please try

Login

Sign Up

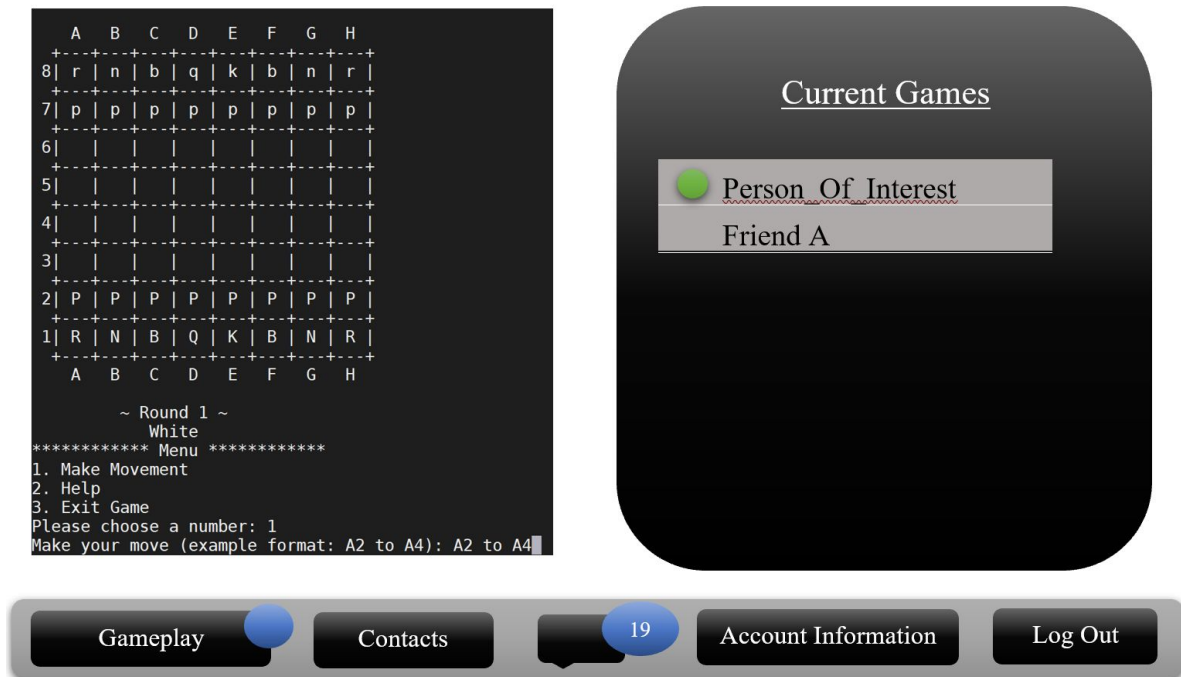
### 3.10 Chess Game Integration

*\* Gameplay tab \**



There will be a blue bubble hovering over the Gameplay button to show that other contacts would like to battle you in a game of chess. In the Gameplay tab, you'll see the contacts that want to challenge you. Use the arrow keys to select the challenger and you may use the mouse to click the checkmark to accept the challenge or the x the decline the challenge. If the user clicks the blue arrow, it will take them to a tab showing the status of the games they have.

\* Current Games tab \*



In the Current Games tab, the user will see the list of challengers they are currently in game. The green bubble hovering over a certain challenger symbolizes that it's your turn to make. You may use the mouse to select which challenger and then on the left side, it will show the board of that game between you and that challenger.

## 4: Chess Program Functions & Features

### 4.1 Official Rules of Chess

During the game, if the user is unsure about the rules, the user may enter 2 during the menu options for help. As soon as 2 has been selected, the screen will print out the rules of the game and the letter representations for each piece.

```

~ Round 1 ~
Black
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 2

```

```

-----Chess Rules-----
Chess Pieces Movement
  Pawn: For each pawn, the first move may either be 1-2 steps forward. After the first usage
        of that Pawn, they may only move 1 space forward at a time. The Pawn may also move diagonally
        forward 1 step to capture the opponent's piece.
  Rook: May move vertically or horizontally as many squares in the horizontal or vertical direction
        as long as the pathway is not blocked.
  Knight: May only move in the shape of a 'L'. For example, 2 steps forward and 1 step right.
  Bishop: May only move diagonally as many squares as long as the pathway is not blocked.
  Queen: Can move 1 step in the surrounding squares. Can also move vertically, horizontally, and
        diagonally as many spaces as long as the pathway is not blocked.
  King: Can only move 1 step in the surrounding squares.

Gameplay
  The White pieces always make the initial move.
  If the Pawn makes it across the board, the Pawn must be promoted to either: a Queen, Rook, Knight,
  or Bishop.
  If the player hasn't moved their King and Rook, they may move their King 2 steps towards the Rook
  and place the Rook on the other side of the King to protect it, known as "Castling". Castling may
  also be applied with a Queen and a Rook. Castling can't be used to avoid being checked or getting
  into check.
  If a pawn moves two squares instead of one from its starting position in order to avoid capture,
  the opponent can capture the just moved pawn as it "passes" through the first square which is also
  known as "En Passant". The opponent must do the en passant capture on their next turn or they may not
  do so. The result of the en passant capture is the same as if the pawn only moved one square instead
  of two.
  When the King is at risk of being captured, it is "checked".
  If the player is unable to make any moves to get out of being "checked" then the game is "checkmate"
  with that player losing the match.
  If the play remains unchecked and has no legal moves, the match will result in a draw.

*****
* Upper case for WHITE *
* Lower case for BLACK *
* 'R' or 'r' = Rook    *
* 'N' or 'n' = Knight  *
* 'B' or 'b' = Bishop  *
* 'Q' or 'q' = Queen   *
* 'K' or 'k' = King    *
* 'P' or 'p' = Pawn    *
*****

```

## 4.2 Game Interface

The board shown below is what the player will see. Each piece is represented by its respective letter (as shown above in the help menu), the black pieces are at the top of the board and are lowercase, and the white pieces are at the bottom of the board and are uppercase. The player can move their pieces by typing position of the piece the player wants to move followed by the position they want to move the piece to. The positions of the pieces are based on the numbers, labeled on the left hand side of the board, and the letters, labeled on the bottom and top of the board. The board will update accordingly when a legal movement is made.

If the player enters a move that is illegal or a move that is in the incorrect format, an error message will appear and the player will be prompted to try again.

If the player is in check, "Check!" will be printed on the screen. If the player is checkmated then "Checkmate!" will print on the screen and the game will end. If the player is not in check and has no legal moves available, then "There is a stalemate! The game will end in a draw." will be printed.

*Illegal Move:*

```

      A  B  C  D  E  F  G  H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4| P |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2|   | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
      A  B  C  D  E  F  G  H

~ Round 1 ~
      Black
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): D7 to D4
Illegal move! Please try again

```

### Incorrect Format for a move:

```

      A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4| P |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2|   | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
      A B C D E F G H

~ Round 1 ~
      Black
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): a2 a4
Incorrect Format! Please try again

```

### Moving opponent piece:

```

      A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4| P |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2|   | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
      A B C D E F G H

~ Round 1 ~
      Black
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): C2 to D4
Invalid move! You cannot move opponents pieces!

```



*Legal Move:*

```

~ Round 1 ~
Black
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): A7 to A5
Legal move!

  A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7|   | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5| p |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4| P |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2|   | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
  A B C D E F G H

```

*Checkmate:*

```

  A B C D E F G H
+---+---+---+---+---+---+---+
8|   |   |   |   |   | k |   | R |8
+---+---+---+---+---+---+---+
7| R |   |   |   |   |   |   |   |7
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |6
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |5
+---+---+---+---+---+---+---+
4|   |   |   |   |   |   |   |   |4
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |3
+---+---+---+---+---+---+---+
2| P | P | P | P | P | P | P | P |2
+---+---+---+---+---+---+---+
1|   | N | B | Q | K | B | N |   |1
+---+---+---+---+---+---+---+
  A B C D E F G H

Would you like to undo this move before moving?
Checkmate!
You win!!!

```



Check:

```

      A B C D E F G H
+---+---+---+---+---+---+
8| r |   | b | Q | k | b | r |   |8
+---+---+---+---+---+---+
7|   | p |   | p | p | p | p | p |7
+---+---+---+---+---+---+
6| p |   |   |   |   | n |   |   |6
+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |5
+---+---+---+---+---+---+
4|   | n |   |   |   |   |   |   |4
+---+---+---+---+---+---+
3|   |   | N |   |   |   |   |   |3
+---+---+---+---+---+---+
2| P |   | P | P | P | P | P | P |2
+---+---+---+---+---+---+
1| R |   | B | Q | K | B | N | R |1
+---+---+---+---+---+---+
      A B C D E F G H

Would you like to undo this move before moving to the next round? (Y/N) n
Check!

```

Stalemate:

```

      A B C D E F G H
+---+---+---+---+---+---+
8| k |   |   |   |   |   |   |   |8
+---+---+---+---+---+---+
7|   |   |   |   |   |   |   | R |7
+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |6
+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |5
+---+---+---+---+---+---+
4|   | R |   |   |   |   |   |   |4
+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |3
+---+---+---+---+---+---+
2| P | P | P | P | P | P | P | P |2
+---+---+---+---+---+---+
1|   | N | B | Q | K | B | N |   |1
+---+---+---+---+---+---+
      A B C D E F G H

Would you like to undo this move before moving to t
There is a stalemate! The game will end in a draw.

```

### 4.3 Player vs Player or Player vs CPU

The program initially asks the user if they would like to play against another user or against a computer. The user will be asked to enter either 1 or 2. If the user enters an invalid option, a warning will display and will ask the user to enter a valid option.

```
***** Mode *****
1. Player vs Player
2. Player vs CPU
Please choose a number: 3
Invalid Input!

***** Mode *****
1. Player vs Player
2. Player vs CPU
Please choose a number: 1
```

### 4.4 Team Option

The program will ask the user if they would like to either make the first move (White) or second (Black). The user will be asked to enter either 1 or 2. If the user enters an invalid option, a warning will display and asks the user to enter a valid option. The option the user selected will display if the user entered a valid option.

```
***** Color *****
1. White Piece
2. Black Piece
Please choose a number: 3
Invalid Input!

***** Color *****
1. White Piece
2. Black Piece
Please choose a number: 1
```

## 4.5 Activity Log

A log will be kept after each movie is made in a text file. The log will say which player made the move and where the piece was moved to. The positions the pieces were moved are based on the number and letter labels on the board.

*Ex: 1 (PvP)*

```
***** Round 1 *****
White: A2 to A4
Black: H7 to H5

***** Round 2 *****
White: C2 to C4
Black: D7 to D6
```

*Ex: 2 (PvCPU)*

```
***** Round 1 *****
(CPU) White: A2 to A4
(Player 1) Black: D7 to D5

***** Round 2 *****
(CPU) White: G1 to F3
(Player 1) Black: H7 to H5
```

## 4.6 Computer Player Time Limit

If the player is playing against the computer player, the computer will have up to 1 minute to make a move. If the 1 minute timer runs out, the other player will win.

## 4.7 Undo Function

Undo option is available only when the user selects Player vs CPU. The player can use the undo option by selecting Y or y when prompted after they made a legal move. The player may only undo a move they just made. If a player chooses to undo, the piece will move back to where it was before it was moved and the player will be prompted to move again. The player may only undo once per turn. The undo prompt will no longer appear for that round if the player decided to undo that round.

### Undoing a move and making another move:

```

~ Round 1 ~
White
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): A2 to A4
Legal move!

  A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4| P |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2|   | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
  A B C D E F G H

Would you like to undo this move before moving to the next round? (Y/N) y

```

Undo was selected

```

Would you like to undo this move before moving to the next round? (Y/N) y

  A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
5|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
4|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
3|   |   |   |   |   |   |   |   |
+---+---+---+---+---+---+---+
2| P | P | P | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
  A B C D E F G H

~ Round 1 ~
White
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 

```

Board updated with undone  
move and user asked to make  
a new move.

```

~ Round 1 ~
  White
***** Menu *****
1. Make Movement
2. Help
3. Exit Game
Please choose a number: 1
Make your move (example format: A2 to A4): B2 to B4
Legal move!

  A B C D E F G H
+---+---+---+---+---+---+---+
8| r | n | b | q | k | b | n | r |
+---+---+---+---+---+---+---+
7| p | p | p | p | p | p | p | p |
+---+---+---+---+---+---+---+
6|  |  |  |  |  |  |  |  |
+---+---+---+---+---+---+---+
5|  |  |  |  |  |  |  |  |
+---+---+---+---+---+---+---+
4|  | P |  |  |  |  |  |  |
+---+---+---+---+---+---+---+
3|  |  |  |  |  |  |  |  |
+---+---+---+---+---+---+---+
2| P |  |  | P | P | P | P | P |
+---+---+---+---+---+---+---+
1| R | N | B | Q | K | B | N | R |
+---+---+---+---+---+---+---+
  A B C D E F G H

```

Board updated with new move.

# Back Matter:

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## **Error Messages**

Chat Error Messages:

1. Invalid login information

“Incorrect login information. Please try again.”

2. User ID is already taken

“That user ID is already taken. Please try again.”

Chess Error Messages:

1. Illegal Moves

“Illegal move! Please try again”

2. Invalid inputs

“Invalid input!”

“Invalid input! Please try again”

3. Incorrect format for movements

“Incorrect Format! Please try again”

4. Using opponent's pieces instead of your own

“Invalid move! You can't move opponents' pieces!”

5. Choosing invalid selection on the main menu

“Invalid Selection”

6. King tried to move itself into a threatened position.

“King cannot sacrifice itself! Please try again.”

7. Choosing invalid selection for promotion

“Invalid selection!”

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