User Manual

**Overview**

This Chat Application is a simple GUI-based program built using Python's Tkinter library. It allows the users to register, log in, send messages, and view chat history. User data and chat messages are stored in JSON and text files.

**Requirements**

* Python 3.x
* Tkinter library (comes pre-installed with Python)
* Basic understanding of how to run Python scripts

**Installation**

* Ensure that you have installed Python 3.x on your machine.
* Copy the provided Python code into a file named app.py.
* Run the script using the command: python app.py

**Features**

* User Registration: New users can create an account.
* User Login: Registered users can log in to the chat.
* Send Messages: Users can send messages that are timestamped.
* View Chat History: Users can see previous messages.
* Clear Chat: Users can clear the chat area.
* Logout: Users can log out and return to the login screen.

**User Guide**

**1.** **Registration**

Step 1: Open the application.

Step 2: Enter username in the "Username" field.

Step 3: Enter a password in the "Password" field.

Step 4: Click the "Register" button.

Step 5: If the registration is successful, a message will confirm your account creation. If the username already exists or fields are empty, an error message will be displayed.

**2. Login**

Step 1: Enter your registered username in the "Username" field.

Step 2: Enter your password in the "Password" field.

Step 3: Click the "Login" button.

Step 4: If the login is successful, you will be taken to the chat interface. If the credentials are incorrect, an error message will be displayed.

**3. Sending Messages**

Step 1: In the chat interface, type your message in the message entry field.

Step 2: Click the "Send" button.

Step 3: Your message will appear in the chat area with a timestamp.

**4. Viewing Chat History**

The chat history is automatically loaded when you log in. All previous messages will be displayed in the chat area.

**5. Clearing Chat**

Step 1: Click the "Clear Chat" button.

Step 2: This will remove all messages from the chat area. Note that this does not delete the messages from the chat history file.

**6. Logging Out**

Step 1: Click the "Logout" button.

Step 2: You will be taken back to the login screen, and your username and password fields will be cleared.

**File Structure**

users.json: Stores user credentials (username and password).

chat.txt: Stores chat messages sent by users.

**Troubleshooting**

Application does not start: Ensure Python is installed correctly and that you are running the script in a Python environment.

Registration/Login issues: Make sure you are entering the correct username and password. Check the users.json file for existing usernames.

Chat messages not saving: Ensure you have write the permissions in the directory where the script is running.

**Conclusion**

This Chat Application provides a basic framework for user interaction through messaging. It can be further enhanced with features like user authentication, message encryption, and a more sophisticated user interface.