Project Documentation

Overview

This document provides an overview of the project structure, detailing the purpose and functionality of each package and its components. The project is organized into several packages, each responsible for different aspects of the application.

Package Structure

1. Controller Package

- **ChatSessionManager.java**: Manages chat sessions, including starting, ending, and maintaining session states.
- **ContactManager.java**: Handles operations related to user contacts, such as adding, removing, and updating contact information.
- **GroupManager.java**: Manages group-related functionalities, including creating, updating, and deleting groups.
- **UserAuthManager.java**: Responsible for user authentication processes, including login and logout functionalities.

2. DAO (Data Access Object) Package

- **ChatDAO.java**: Provides data access methods for chat-related data, facilitating CRUD operations.
- **ContactDAO.java**: Manages data access for contact information, enabling interaction with the database.
- **GroupDAO.java**: Handles data access for group data, supporting database operations.
- **UserDAO.java**: Provides methods for accessing and manipulating user data in the database.

3. Factory Package

- **GroupFactory.java**: A factory class for creating different types of group objects.
- **ImageMessage.java**: Represents an image message object.
- **MessageFactory.java**: A factory class for creating message objects of various types.
- **PrivateGroup.java**: Represents a private group entity.
- **PublicGroup.java**: Represents a public group entity.
- **TextMessage.java**: Represents a text message object.

- **VideoMessage.java**: Represents a video message object.

4. Icon Package

Contains image files used for the application's graphical user interface (GUI), such as icons for buttons and backgrounds.

5. Model Package

- **Group.java**: Represents the data model for a group.
- **Message.java**: Represents the data model for a message.
- **User.java**: Represents the data model for a user.

6. Observer Package

- **ChatNotifier.java**: Notifies observers about chat-related events.
- **ChatObserver.java**: Defines the observer interface for chat events.
- **ChatSubject.java**: Defines the subject interface for managing chat observers.

7. Proxy Package

- **MessageSender.java**: Interface for sending messages.
- **MessageSenderProxy.java**: A proxy class for controlling access to the real message sender.
- **RealMessageSender.java**: The actual implementation of the message sender.

8. Util Package

- **Database.java**: Provides utility methods for database connection and operations.

9. View Package

Contains classes and forms related to the graphical user interface (GUI) of the application:

- **ChatWindow.java**: Represents the chat window interface.
- **Contact.form & Contact.java**: Represents the contact management interface.
- **Groups.form & Groups.java**: Represents the group management interface.
- **GUI.java**: Main GUI class for the application.
- **Home.form & Home.java**: Represents the home screen interface.
- **Login.form & Login.java**: Represents the login interface.
- **SignUp.form & SignUp.java**: Represents the sign-up interface.