

Documentation

Git Repository Organization

Branching and Updates

Initial Setup:

- The project began with basic setup and component initialization.

Development:

- Commits were regularly made to include new features and fixes, such as:
 - Basic chat functionality
 - User account management
 - Admin and super admin features
- Created branch for code cleaning.
- Merged cleaning branch into the main branch.

Update Frequency:

- Commits were made frequently, with a focus on specific features and bug fixes.
- Commits include adding functionality like group and channel management, user requests, and permissions.

Data Structures

Client-Side & Server-Side

- **Users:**
 - `id` : Unique Number
 - `username` : String
 - `email` : String
 - `roles` : Array of Strings (e.g., `['admin', 'superAdmin']`)
 - `groups` : Array of Strings
- **Groups:**
 - `id` : String
 - `name` : String
 - `ownerName` : String
 - `admins` : Array of Strings
 - `members` : Array of Strings
- **Channels:**
 - `id` : String
 - `name` : String
 - `groupId` : String
- **Messages:**
 - `channelId` : String
 - `username` : String
 - `text` : String

Angular Architecture

Components

- **Register Component:** Handles user registration.
- **Login Component:** Manages user login.
- **Chat Component:** Manages group and channel chat functionality.
- **Profile Component:** Displays and manages user profile details.

Models

- **UserModel:** Represents user data.
- **GroupModel:** Represents group data.
- **ChannelModel:** Represents channel data.
- **MessageModel:** Represents message data.

Routes

- `/register` : Route to the Register component.
- `/login` : Route to the Login component.
- `/chat` : Route to the Chat component.
- `/profile` : Route to the Profile component.

Node Server Architecture

Modules

- **server.js**: Handles server operations

Functions

- `registerUser()` : Registers a new user.
- `loginUser()` : Authenticates a user.
- `createGroup()` : Creates a new group.
- `deleteGroup()` : Deletes a group.
- `addMember()` : Adds a member to a group.
- `removeMember()` : Removes a member from a group.
- `sendMessage()` : Sends a message to a channel.
- `getMessages()` : Retrieves messages for a channel.

Files

- **server.js**: Entry point for the server, sets up middleware and routes.
- **config.js**: Configuration settings for the server.

Client-Server Interaction

Data Changes

- **User Actions**: User actions such as creating a group or sending a message trigger server-side operations to update the local storage.
- **Display Updates**: Angular components update the UI based on data received from the server or changes in the local state.

Component Updates

- **Register/Login**: Submitting forms triggers server requests to create or authenticate a user, respectively.
- **Chat**: Selecting a group or channel updates the view and fetches messages from the server.
- **Profile**: Fetches user details from the server and updates the view.