Requirements Document

Objective:

Our main objective is to create a Python application dedicated to private communication on local networks (LAN) and wireless local networks (WLAN). We aim to provide users with a user-friendly platform where they can exchange messages securely. The application focuses on facilitating private conversations, emphasizing ease of use and the confidentiality of exchanges. We also aim to integrate modern features such as sending emojis, file sharing, and the ability to participate in group discussions. Our ultimate goal is to deliver a smooth and secure communication experience, allowing users to manage multiple sessions and customize their interaction according to their needs.

Used Technologies:

1. Programming Language:

Python

2. Web Framework:

Flask/Django

3. Encryption Libraries:

cryptography.fernet,for message encryption.

4. Database:

SQLite (for a lightweight and simple solution)

5. Real-Time Communication:

Flask-SocketIO (or Django Channels) for real-time communication.

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6. User Interfaces:

Vue.js

HTML, CSS for layout.

JavaScript (or TypeScript) for interactive client-side features.

Main Functionalities:

1. User Authentication:

Users should be able to create accounts, log in, and log out.

2. Private Messaging:

Ability to send private messages to other users.

3. Emoticons:

Integration of a range of emoticons to enhance user expression.

4. File Sharing:

Capability to send and receive files, such as images, documents, etc.

5. Group Chats:

Feature to create and participate in group discussions.

6. Multiple Sessions:

Users should be able to manage and switch between multiple chat sessions.

7. Security and Confidentiality:

Implementation of secure user authentication.

Message encryption to ensure confidentiality.

8. Intuitive User Interface:

Creation of an intuitive user interface with user-friendly features.

9. Group Management:

Capability to create, manage, and join discussion groups.

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