**Real-Time Chat Application (Web-Based) - Software Engineering Requirements**

1. Authentication: The system shall support user authentication via Gmail, requiring users to register or log in using their Gmail accounts.
2. Chats: The system shall allow users to send and receive text messages in real-time. The system shall support file attachments, including images, documents, and other media. The system shall allow users to share their geographical location within a chat session. Chats shall be encrypted end-to-end to ensure user privacy and data security. Chats shall be ephemeral, automatically deleting from the system 24 hours after being sent.
3. Notification: The system shall enable push notifications on users' devices for incoming messages. The system shall allow users to opt in to receive email notifications for unread messages or events.
4. Profile Picture: The system shall provide a default profile picture for users who do not upload their own. The system shall allow users to change their profile picture at any time.

Further Implantation If possible:

1. Keyboard: The system shall support a multilingual keyboard to accommodate users who communicate in different languages.
2. Compatibility: The system shall be compatible with major web browsers including Google Chrome, Mozilla Firefox, and Safari.
3. QR code: The system shall implement QR code functionality to allow users to easily share their profiles.
4. Lockout: The system shall automatically sign out users after a period of inactivity to enhance security.