CSC 431 - Spring 2025

Runic

Software Requirements Specification

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Date: February 2025

Version: 1.0

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2. Version History

Version	Date	Description	Author(s)
1.0	2-20	Initial Draft	Sophia Mantegari, Justin Bonner
1.1	2-23	Rename, tables/figures added, small changes	Justin Bonner, Andrea Venti Fuentes

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1. System Requirements

1.1 Functional Requirements

Requirement ID	Title	Description
FR-01	Multi-Platform Integration	The system must integrate with iMessage, WhatsApp, Discord, and GroupMe.
FR-02	Centralized Messaging	Users should send/receive messages across platforms in one interface.
FR-03	Categorized Chat Management	Users must organize conversations into categories like "Work," "Personal," and "Academic."
FR-04	End-to-End Encryption	All messages must be encrypted for security.
FR-05	Real-Time Translation	AI-powered translation should handle various languages, including slang and business terminology.
FR-06	User Authentication	Users must register, log in, and manage accounts securely.
FR-07	Notification System	Users should receive notifications for messages from all integrated platforms.

1.2 Non-Functional Requirements

Requirement ID	Title	Description
NFR-01	Scalability	Must support a large number of users with high efficiency.
NFR-02	Usability	UI must be intuitive and user-friendly.
NFR-03	Security	System must comply with security standards such as AES-256 encryption and OAuth authentication.
NFR-04	Availability	Should maintain 99.9% uptime.
NFR-05	Performance	Messages should be processed within 200ms latency.

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2. System Constraints

2.1 Tool Constraints

- **Backend Development:** Python (Flask/Django).
- **Frontend Development:** React.js.
- **Database:** PostgreSQL or MongoDB.

2.2 Language Constraints

- Supports **English, Spanish, French, Mandarin**, and other widely spoken languages will be added in future updates.

2.3 Platform Constraints

- Compatible with **Windows, macOS, iOS, Android, and Web**.

2.4 Hardware Constraints

- The system should function on devices with at least **4GB RAM and 2GHz processors**.
- Mobile devices should support the application with minimal resource consumption.

2.5 Network Constraints

- The system should operate efficiently over **3G, 4G, 5G, and Wi-Fi connections**.
- Real-time translation and chat integration should function at **low bandwidth consumption**.

2.6 Deployment Constraints

- The system should be hosted on **AWS, Google Cloud, or Azure** for scalability.
- It should be deployable as a **containerized application using Docker**.

2.7 Transition & Support Constraints

- Regular updates and security patches will be provided.

- A customer support chatbot and live agents will assist users.

2.8 Budget & Schedule Constraints

- Development cycle: **6 months**.
- Budget: **$50,000** for infrastructure and API licensing.

2.9 Miscellaneous Constraints

- Compliance with **GDPR, CCPA**, and other regulatory policies.

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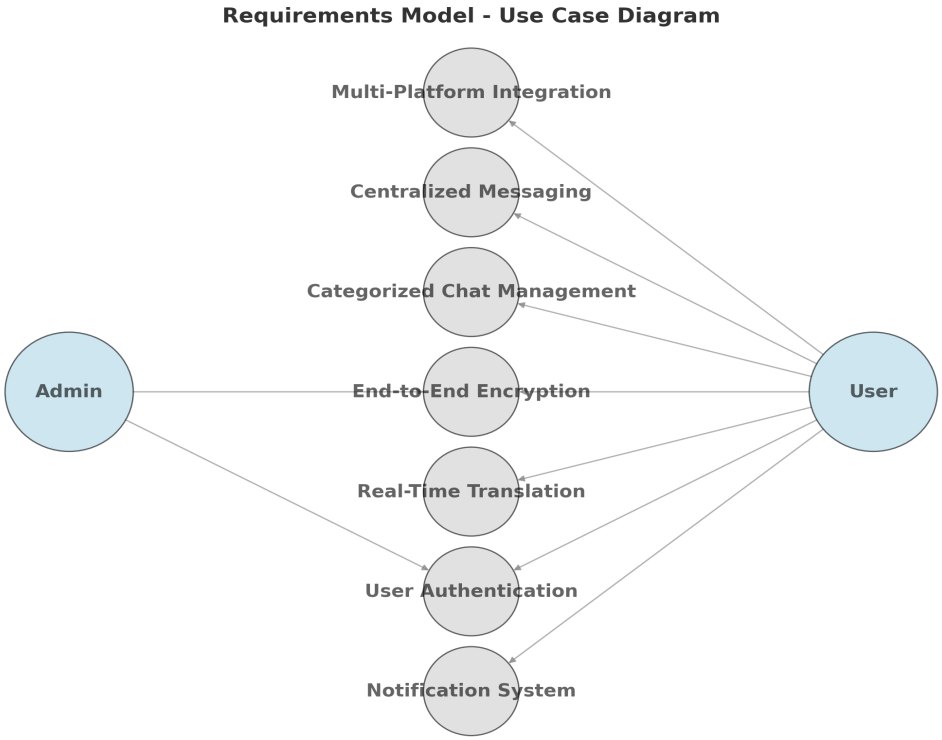
3. Requirements Modeling



4. Evolutionary Requirements

4.1 Functional Requirements

1. **AI-Powered Chatbot Integration:** Future versions should allow AI-powered assistants for auto-reply and scheduling.
2. **Voice Message Transcription:** Users should be able to transcribe voice messages into text.
3. **API for Third-Party Developers:** Runic should provide an API for external developers to integrate new features.

4.2 Non-Functional Requirements

1. **Blockchain-Based Security Enhancements:** In future iterations, decentralized security mechanisms should be explored.
2. **Improved AI for Smart Responses:** The translation AI should learn from user preferences to enhance accuracy.