

Software Lab – Week - 1

SOFTWARE REQUIREMENTS SPECIFICATION (SRS)

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CareChain: Consent-Driven Migrant Health Monitoring Platform

1. Introduction

Migrant HealthGuard is a web-based system that securely collects migrant health data with explicit consent, analyzes anonymized data using AI, and generates early disease alerts for individuals and public health authorities while preserving privacy.

2. Overall Description

The system uses a **React frontend**, **Node.js backend**, **MongoDB database**, and **Gemini AI**. It supports multiple user roles with strict consent-based access control.

3. User Classes

- **Migrant Worker:** Owns health data, controls consent, views personal alerts
 - **Healthcare Provider:** Enters and views patient data with consent
 - **Public Health Authority:** Views only aggregated trends and alerts
 - **Admin:** Manages system operations
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4. Functional Requirements

- Secure user registration and role-based login
 - Consent management (OFF by default)
 - Health data entry by providers and self-reporting by workers
 - Secure data storage in MongoDB
 - Anonymized AI analysis for disease pattern detection
 - Alert generation and role-based dashboards
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5. Non-Functional Requirements

- High security (encryption, no PII to AI)
 - Scalable and reliable system
 - Fast alert generation
 - Simple and accessible user interface
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6. System Architecture

React Frontend → Node.js Backend → MongoDB → Gemini AI → Alerts & Dashboards

7. Conclusion

The system enables ethical, AI-driven disease surveillance by combining consent-based data control, privacy preservation, and early public health intervention.