
Software Requirements Specification

for

Milestone Tracker for Infants

Version 1.0

Prepared by

Group No. : AN-3

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1 Introduction

This project is a prototype for a Developmental Milestone Tracking System, an application designed to assist parents and authorities in monitoring the growth and development of infants and children. The system provides a structured way for parents to track their child's progress through periodic questionnaires tailored to the child's age. Authorities can use this data to identify children needing early intervention and generate statistical insights for public health initiatives.

1.1 Document Purpose

This document provides a comprehensive analysis of the Developmental Milestone Tracking System, covering both functional and non-functional requirements. The system is designed to provide a user-friendly interface for parents to answer milestone-based questionnaires, view historical development records, and receive reminders for key health-related activities. It also enables authorities to manage questionnaires, analyze milestone trends, and flag children who might require additional support. The document highlights essential functionalities such as milestone tracking, notifications, and statistical reporting. Additionally, a use-case diagram illustrates key interactions between users and the system, demonstrating how parents and authorities engage with the application.

1.2 Product Scope

The Developmental Milestone Tracking System aims to bridge the gap between parental awareness and professional intervention by offering an intuitive platform for tracking child development. The platform provides:

- A structured milestone assessment system for parents.
- A centralized database for authorities to manage and analyze child development trends.
- Timely alerts and notifications for vaccinations, health check-ups, and milestone assessments.
- Bilingual support (Malayalam and English) for broader accessibility.
- Secure storage of sensitive health data in compliance with privacy regulations.

The system is designed with a mobile-first approach, ensuring ease of access for parents across various socio-economic backgrounds. Additionally, it offers offline functionality, allowing parents to complete assessments without an internet connection and sync data when online.

1.3 Intended Audience and Document Overview

This document is intended for multiple stakeholders involved in the development and operation of the Developmental Milestone Tracking System:

- **System Designers:** To reference design specifications and ensure proper implementation.
- **Developers & Testers:** To ensure all requirements are met and tested.
- **Healthcare Authorities & Administrators:** To use the system for tracking child development trends and intervening when necessary.
- **Parents & Guardians:** To understand how the system works and how it benefits them.
- **Maintenance Staff:** To refer to the document for future updates and modifications.

The following sections outline the functional and non-functional requirements of the system.

The document also provides details on accessibility features, use cases, and system security measures to ensure data privacy and user confidentiality.

1.4 Definitions, Acronyms and Abbreviations

S.No	Abbreviation/Term	Definition(s)
1	SRS	Software Requirements Specifications
2	IMHANS	The Institute of Mental Health and Neurosciences
3	MTI	Milestone Tracker for Infants
4	User	A person accessing the mobile application
5	Admin	Super Admin of the system managing the network
6	Database	Stores information about users,job openings,events,etc

1.5 Document Conventions

This document follows the IEEE formatting requirements.

1.6 References and Acknowledgments

- [Use-Case Diagram- Visual Pradigm](#)
- IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998

2 Functional Requirements

Parent's Interface

- ❖ **F1:** Parents should be able to register and log in securely.
 - The system should support multi-factor authentication (MFA) for enhanced security.
 - User credentials should be stored securely with encryption to prevent unauthorized access.
- ❖ **F2:** Parents should have access to age-specific milestone questionnaires.
 - The system should present relevant questions dynamically based on the child's age.
 - Questionnaires should be updated periodically to align with the latest child development research.
- ❖ **F3:** The system should track and display a child's milestone history.
 - Parents should be able to view a timeline of completed milestones.
 - Milestone data should be visually represented for better understanding.
- ❖ **F4:** Parents should receive notifications for due questionnaires.
 - The system should send reminders via push notifications.
 - Notifications should be configurable to avoid unnecessary alerts.
- ❖ **F5:** A representation of milestone progress should be available.
 - A graphical dashboard should display progress trends.
 - Color-coded indicators should help parents quickly identify areas of concern.
- ❖ **F6:** A gamified interface should be included to encourage questionnaire completion.
 - Rewards or badges should be given upon completing questionnaires.
 - A progress bar should visually track questionnaire completion.
- ❖ **F7:** Parents should be able to provide feedback on the app's usability.
 - A feedback form should be available within the app.
 - Feedback should be categorized to improve different aspects of the app.
- ❖ **F8:** The system should dynamically adjust milestone expectations for premature births.
 - The system should consider gestational age when evaluating milestones.
 - Recommendations should be adjusted based on medical guidelines.
- ❖ **F9:** The interface should support Malayalam and English for broader accessibility.
 - Users should be able to switch between languages easily.
 - The UI should ensure clarity and simplicity in both languages.
- ❖ **F10:** Offline functionality should be available, allowing questionnaire completion without an internet connection, with syncing upon reconnection.
 - Users should be able to store responses locally when offline.
 - Data should automatically sync when a stable connection is restored.

Authority's Interface

- ❖ **F11:** Authorities should be able to add, remove, and modify questionnaire questions dynamically.
 - The web interface should allow authorized users to update questionnaire content.
 - Changes should be reflected instantly without requiring app updates.
- ❖ **F12:** The system should generate area-wise statistics based on collected data.
 - Authorities should be able to view milestone trends by geographic location.
 - Data visualization tools should be incorporated for better insights.
- ❖ **F13:** Authorities should be able to filter statistics by age group, gender, and location.
 - Filters should allow easy navigation and comparison of key demographic data.
 - The system should generate reports based on selected criteria.
- ❖ **F14:** Exportable reports should be available for offline use.
 - Reports should be downloadable in PDF and Excel formats.
 - Data should be structured for easy interpretation and further analysis.
- ❖ **F15:** Real-time notifications should be sent to authorities when children show concerning results.
 - The system should trigger alerts for cases needing immediate attention.
 - Notifications should include details to help authorities take timely action.
- ❖ **F16:** The UI should be simple and intuitive for ease of use.
 - The design should prioritize accessibility for users of all literacy levels.
 - Icons and visual cues should aid in navigation and usability.

Mobile-First Approach

- ❖ F17 - The parent-facing interface should prioritize mobile app development, while authorities primarily use a web interface for management.

3 Non-functional Requirements

3.1 Performance Requirements

3.1.1 System Responsiveness

- The system should respond to user actions within one to two seconds for standard operations such as logging in, answering questionnaires, viewing milestone history, and generating reports.

3.1.2 Scalability

- The system should be capable of handling a large volume of data, including information on multiple children, questionnaire responses, milestone tracking, and reports.
- The system should support a high number of concurrent users, ensuring smooth performance even during peak usage times (e.g., when many parents are submitting responses simultaneously).

3.2 Safety and Security Requirements

3.2.1 Data Security

- All user data, including personal and child-related information, should be stored securely in a **protected database**.
- **Sensitive data should be encrypted** to prevent unauthorized access.
- Regular **backups should be implemented** to prevent data loss.

3.2.2 User Privacy

- The system should comply with **data privacy regulations**, ensuring that user data is collected, stored, and processed responsibly.
- **Access to personal data should be limited** to authorized personnel only.
- Parents should have **control over their data**, including the ability to delete their accounts and associated information.

3.3 Software Quality Attributes

3.3.1 Reliability

The system should function **without lag** and provide **instant and accurate** results to users.

It should have **high uptime**, ensuring that parents and authorities can access it anytime.

3.3.2 Adaptability

The system should be **extendable** to other organizations or institutions, allowing further adoption and use beyond the initial scope.

3.3.3 Maintainability

The system should be **easy to maintain**, ensuring that errors or bugs can be rectified by any developer without significant downtime.

Well-documented code and **modular architecture** should be maintained for ease of updates and fixes.

3.3.4 Portability

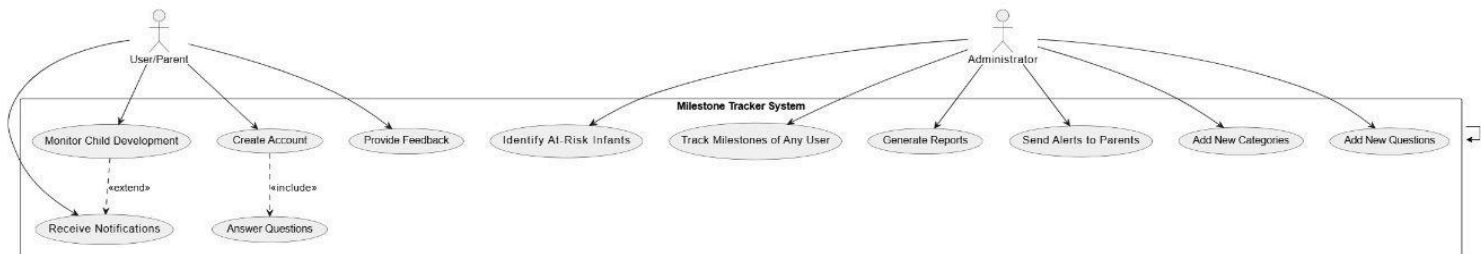
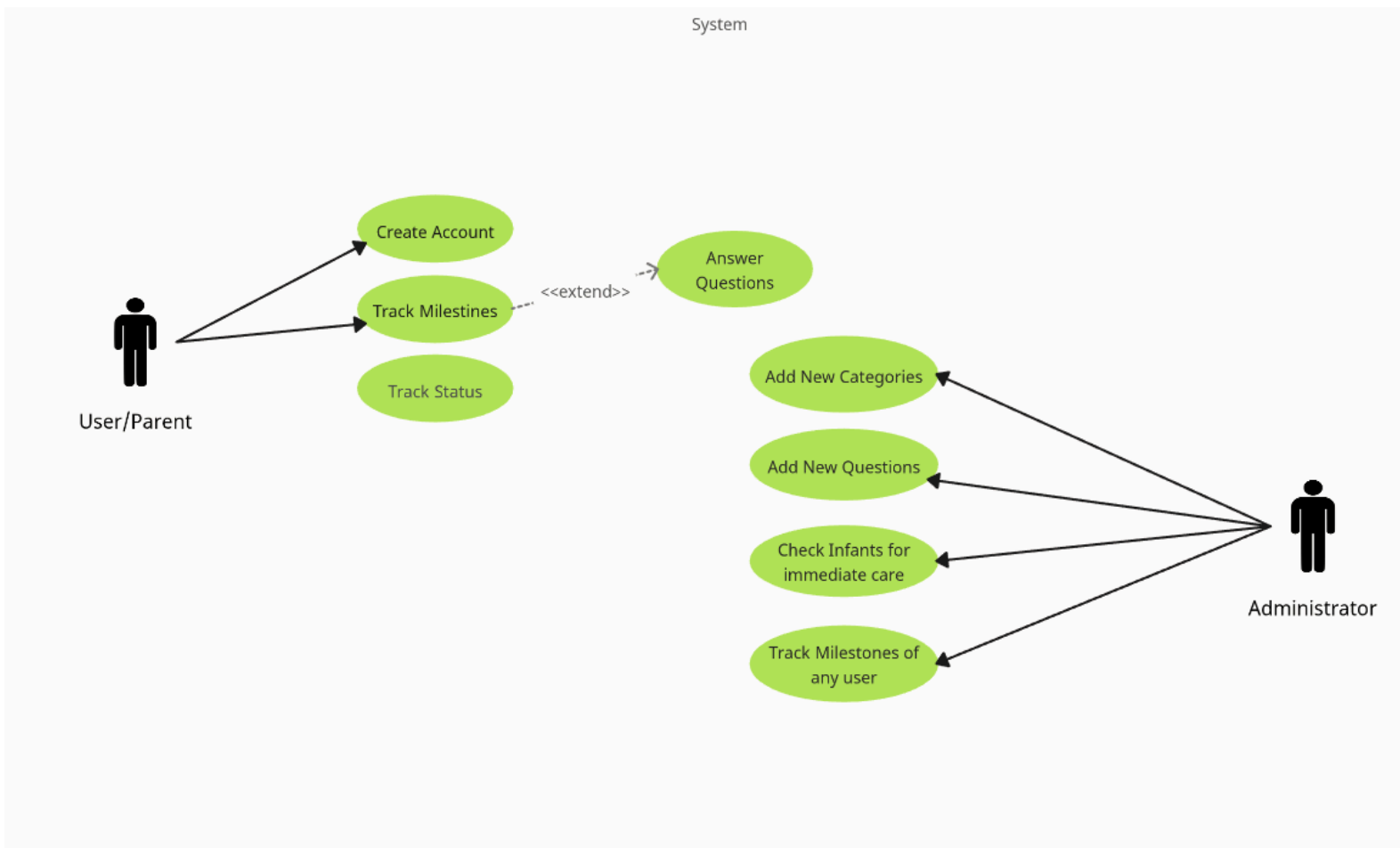
The system should be **deployable on any device**, including mobile phones, tablets, and desktops.

The database should be structured for **efficient queries and user-friendly management**.

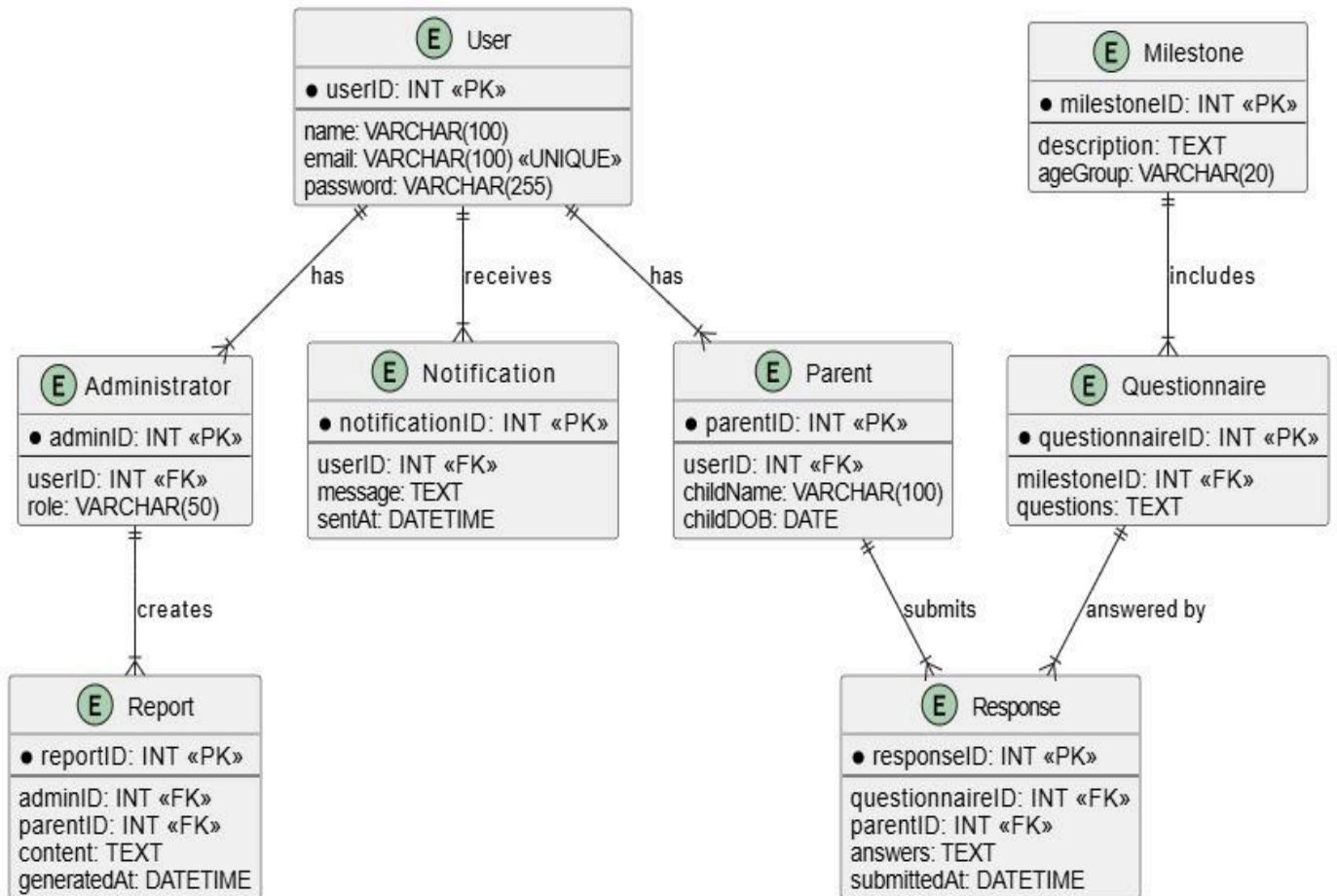
3.3.5 Cost-Effectiveness

The system should be designed to be **affordable and sustainable**, ensuring that it can be used by a broad range of users, including non-profit organizations and government agencies.

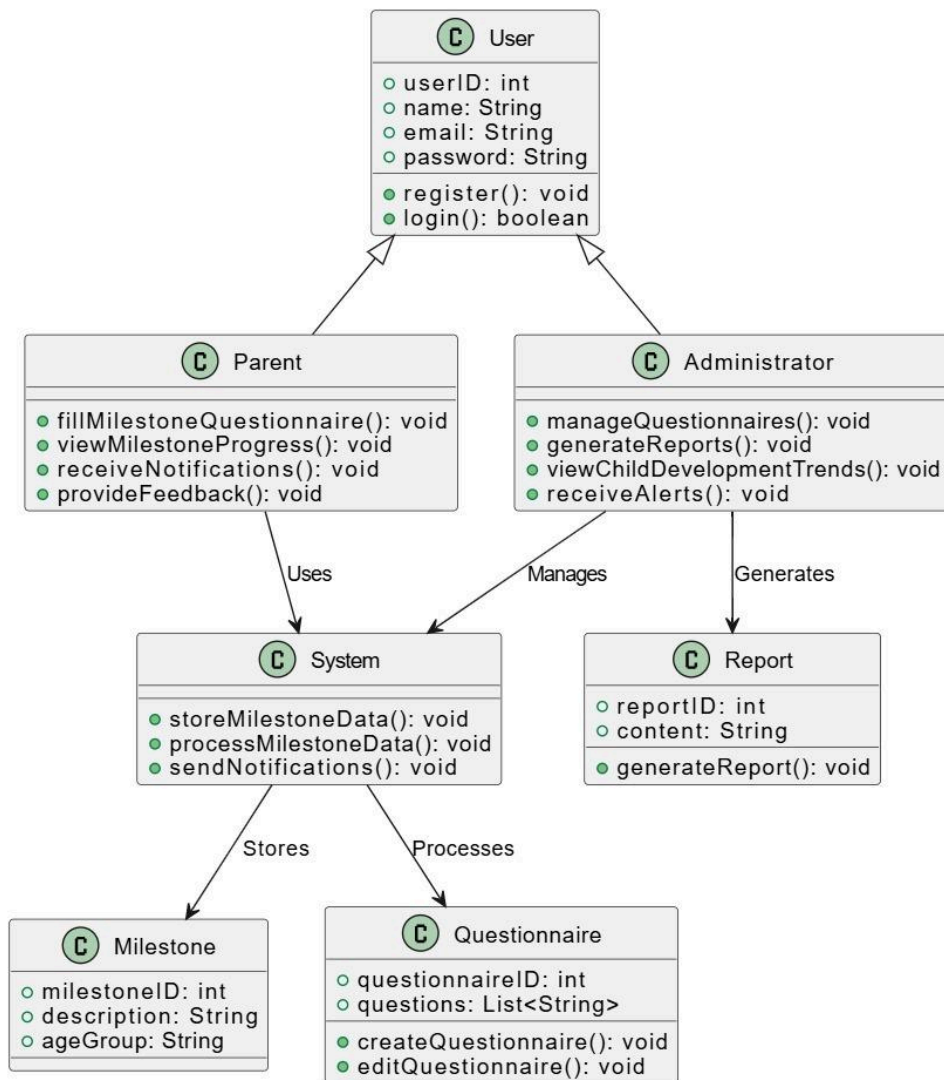
4 Use Case Diagram



Database Diagram



Class Diagram



Appendix A

Admin	They are theadmins who have built and manage the mobile and web application.
User	They are the people accessing the mobile application
Database	A database is an organized collection of data, generally stored and organised on a computer
IMHANS	The organization for which the application is developed

Appendix B

Meeting Day	Timings
17/02/2025	05:00 - 08:00 PM
18/02/2025	05:00 - 09:00 PM
19/02/2025	05:00 - 07:00 PM

Name	Contributions
Rohith Ramdas	Design,Functional Requirements F1-F10
Noufal Rahim	Introduction,Functional Requirements F11-F18,Non-Functional Requirements
Gokul Krishna M R	Functional Requirements F19-F32,Use Case Diagram and Use Cases