Defined System Requirements for the Medication Adherence System

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1 Defined System Requirements

1.1 Functional Requirements

Req ID	Title	Description	Priority
FR1	Medication Schedule Retrieval	The system shall retrieve upcoming medication schedules from the Medication Schedule Store for each patient.	High
FR2	Medication Reminder Dispatch	The system shall automatically send medication reminders to patients when the scheduled time is reached.	High

Req ID	Title	Description	Priority
FR3	Adherence Confirmation Input	The system shall receive adherence confirmation from patients, including relevant details such as timestamp and status.	High
FR4	Adherence Record Logging	The system shall record each adherence confirmation in the Adherence Records Store to track when medications are taken or missed.	High
FR5	Report Generation	The system shall generate adherence reports by compiling data from the Adherence Records Store (and optionally the Patient Data Store), store the reports, and send them to the Healthcare Provider.	Medium
FR6	Patient Data Submission	The system shall allow patients to submit their personal and medical data, which will be validated and stored in the Patient Data Store.	High
FR7	Healthcare Provider Data Access	The system shall allow healthcare providers to securely retrieve patient data from the Patient Data Store after verifying their credentials.	High
FR8	Reminder Logging	The system shall log all reminder dispatch events for auditing and troubleshooting purposes.	Medium

1.2 Non-Functional Requirements

Req ID	Title	Description	Priority
NFR1	Security & Privacy	All data transactions must be secured via encryption and proper authentication. The system should comply with relevant regulations (e.g., HIPAA) where applicable.	High
NFR2	Performance	The system shall deliver medication reminders and process adherence confirmations within 2 seconds of the scheduled time.	Medium
NFR3	Availability	The system shall maintain an uptime of at least 99.9%, ensuring reliable access for patients and healthcare providers.	High

Req ID	Title	Description	Priority
NFR4	Usability	The system shall provide an intuitive, user-friendly interface that requires minimal training for both patients and healthcare providers.	Medium
NFR5	Scalability	The system shall be designed to scale efficiently, accommodating an increasing number of patients and healthcare providers without performance degradation.	Medium
NFR6	Maintainability	The system shall be developed using modular and well-documented code to facilitate ease of maintenance and future enhancements.	Medium

1.2.1 How to Use These Requirements

- **Functional Requirements (FRs):**
  These describe the specific behaviors and functions of the system. For example, FR2 ensures that reminders are sent on time, while FR4 tracks adherence events.
- **Non-Functional Requirements (NFRs):**
  These outline the quality attributes of the system. They address security, performance, availability, usability, scalability, and maintainability, which are critical for a system that handles sensitive healthcare data.

1.3 Use Case Diagrams

Below are two use case diagrams. One for the functional requirements and one for the non-functional requirements.

1.3.1 Functional Requirements Use Case Diagram

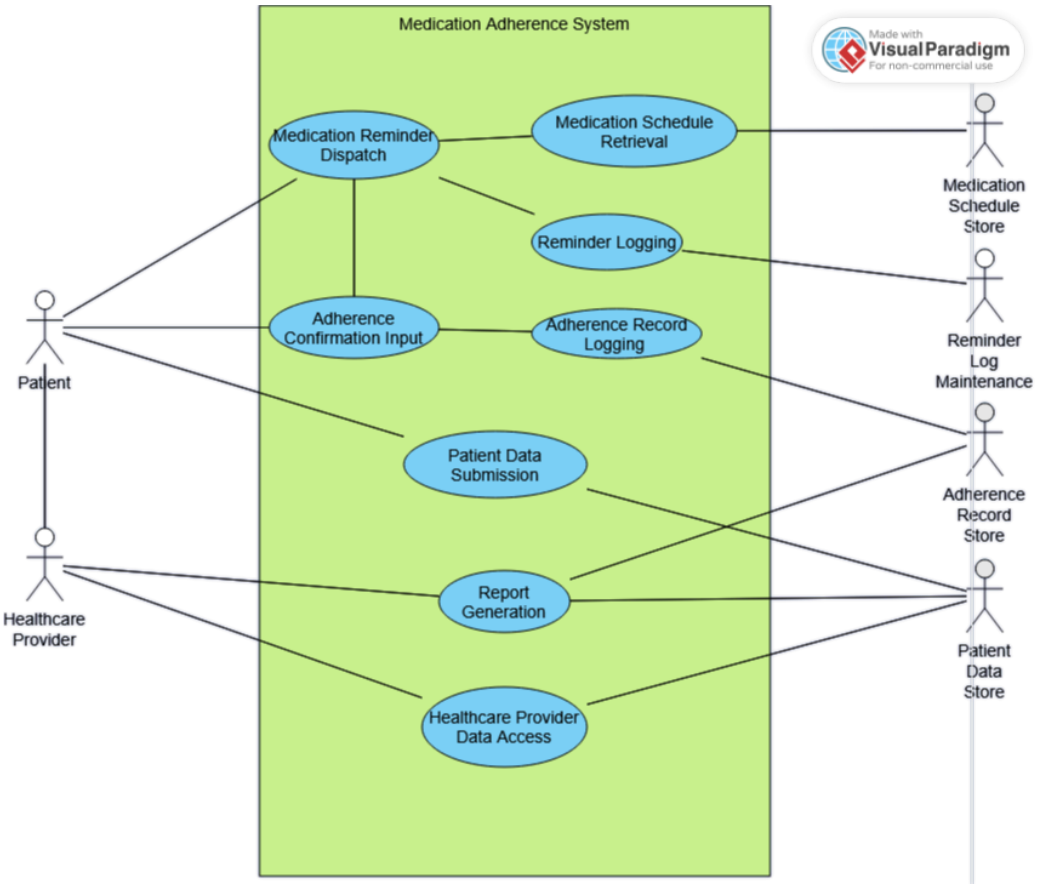

Figure 1: Use case diagram for functional requirements using Visual Paradigm

1.3.2 Non-Functional Use Case Diagram

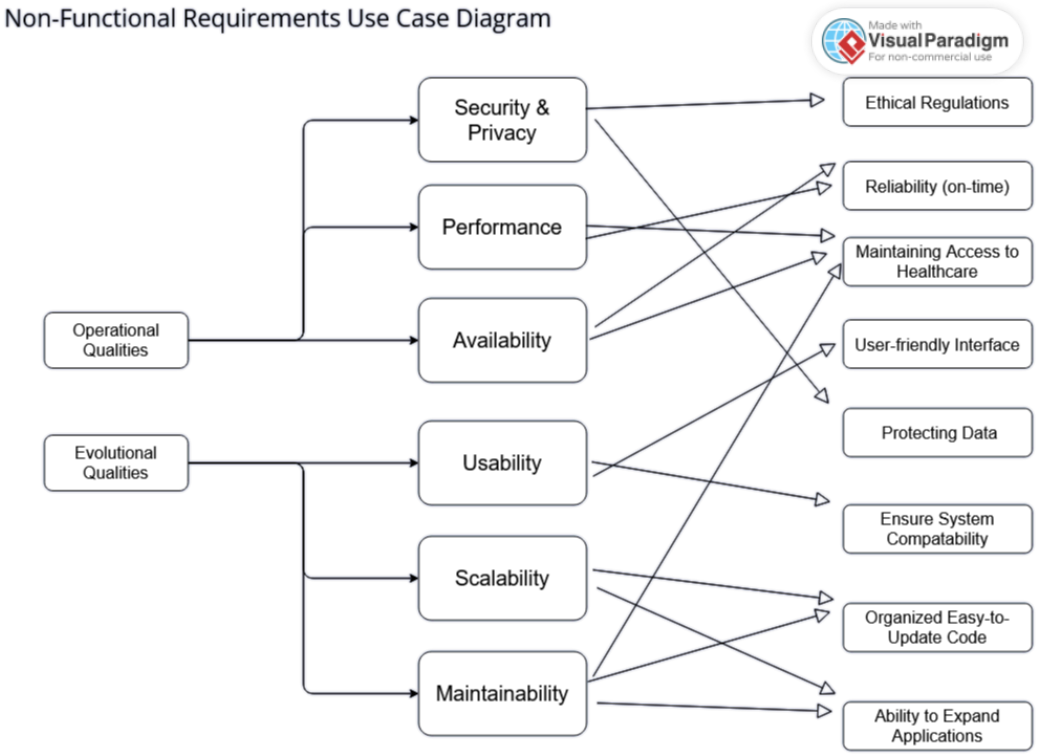

Figure 2: Use case diagram for non-functional requirements using Visual Paradigm