Ahsanullah University of Science & Technology
Department of Computer Science & Engineering

Personal Electronic Health Record (EHR) and Health Monitor System

Software Engineering II (CSE 2100)

Submitted By:

Name	STD ID
Ananta Nayan Bala	20210204028
Tasmia Hossain	20210204038
Abu Dojana	20210204039

ABSTRACT

The **Personal Electronic Health Record and Health Monitor System** is a Java Swing-based desktop application developed using Java Programming Language and MySQL RDBMS program for efficient management of personal health information. This user-centric app **aims to empower individuals in effectively organizing and accessing their health records for better self-care**.

The app allows users to create, update, and maintain their electronic health records, including important details such as medical history, diagnoses, treatments, medications, allergies, immunizations, and lab results. With an intuitive user interface, users can easily navigate through the app and manage their health information conveniently.

The app provides features for users to manually input and track their health metrics. Users can record vital statistics such as blood pressure, heart rate, glucose levels, sleep patterns, and other relevant health indicators within the app. This functionality helps individuals monitor their well-being and gain insights into their health trends.

As a Java Swing application, the focus of security is on providing basic measures to protect user data. The use of MySQL as the database management system ensures data persistence and retrieval. However, additional security measures are considered for data protection, such as implementing secure login mechanism sensitive information.

The Personal Electronic Health Record and Health Monitor System is designed to offer individuals a convenient platform for managing their personal health records and tracking their health metrics. By utilizing Java Swing and MySQL the app provides an accessible and user-friendly solution for individuals to take control of their health information and support their personal health management goals.

Software Platform:

- The project will be developed using Java-Swing.
- MySQL Relational Database Management System (RDBMS).

Identification of functional requirements:

- **User Registration:**
    - The app allows new users to register by providing necessary information such as name, email address, and password.
    - It validates user inputs and ensure unique usernames or email addresses.
    - User registration data securely stored in the system.

- **User Login:**
    - The app provides a login functionality for registered users to access their accounts.
    - The User is able to enter their credentials (username/email and password) to authenticate and gain access to their personal health records.

- **Dashboard:**
  - The app displays a personalized dashboard for the user upon login.
  - The dashboard provides an overview of essential health information, such as upcoming appointments, health metrics, and recent activities.

- **Manage Patient Records:**
  - The app allows to create, view, update, and delete the user's personal health records.
  - User is able to enter and maintain information such as demographics, medical history, medications, allergies, immunizations, lab results etcetera.
  - The app provides organized sections for easy navigation and management of different aspects of patient records.

- **Search Medical Conditions:**
  - The app also includes a search functionality to allow the user to search for specific medical conditions or keywords within their personal health records.
  - Users are able to enter search terms and retrieve relevant records that match the search criteria.
  - The search feature provides accurate and efficient results to aid in information retrieval.

- **Update Medical History:**
  - The app enables users to update their medical history records.
  - User also have the ability to add new entries, modify existing entries, or delete outdated information.
  - The system ensures data integrity and validate user inputs for accuracy and completeness.

- **Appointment Management:**
  - The app offer features for users to manage their appointments.
  - Users are able to schedule, reschedule, or cancel appointments.
  - The app provides notifications and reminders for upcoming appointments to ensure timely attendance.

- **Clinical Documentation:**
  - The app allows users to create and manage clinical documents, such as progress notes, lab reports, or imaging results.
  - Users are able to upload or enter information into the system and attach relevant files.
  - The app provides options for organizing and categorizing clinical documents for easy retrieval.

- **Health Monitoring:**
    - The app allows users to manually input and track their health metrics.
    - Users are able to record and monitor vital statistics such as blood pressure, heart rate, glucose levels, sleep patterns, and other relevant health indicators.
    - The app display visual representations, trends, and insights based on the recorded health data.

- **Reporting and Analytics:**
    - The app offers reporting capabilities to generate customized reports based on user preferences.
    - Users are able to select specific parameters, filters, and metrics to generate reports on their health data or other relevant aspects.
    - The app provides clear and comprehensive reports that help users track progress, identify trends, and make informed decisions.

- **Rating and Feedback:**
    - The app includes a feature for users to rate and provide feedback on healthcare providers, services, or overall experiences.
    - Users have the ability to rate different aspects, such as quality of care, facilities, or communication.
    - The app capture and store ratings and feedback to help improve service quality and user experience.

These functional requirements provide a substance for the progress of the app, aiming to empower users in managing their health information, appointments, and personal health monitoring effectively.

Having identified the major functional requirements, we assign an identifier to each of them for future reference and verification. Following table shows the list:

Table 01: Identifier and priority for software requirements

Requirement Identifier	Requirement	Priority
REQ001	User Registration	High
REQ002	User Login	High
REQ003	Dashboard	Medium
REQ004	Manage Patient Records	High
REQ005	Search Medical Conditions	Medium
REQ006	Update Medical History	High
REQ007	Appointment Management	High
REQ008	Clinical Documentation	Medium
REQ009	Health Monitoring	High
REQ010	Reporting and Analytics	Medium
REQ011	Rating and Feedback	Low