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Individual Project Plan

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Unified Healthcare Management System (UHMS)

Project Overview

The Unified Healthcare Management System (UHMS) is a cutting-edge solution aimed at enhancing healthcare management and patient care through streamlined access to medical records. This system allows patients to manage their profiles, including allergies and view medical history, treatment plans and authorize specific doctors to access their records. UHMS serves doctors, patients, and administrators, integrating desktop and web applications for a comprehensive health management experience.

Objectives

- **Secure and Accessible Digital Platform**: Make patient medical and treatment records easily accessible online.

- **Efficient Management for Healthcare Providers**: Simplify how healthcare providers handle patient records, treatment plans, and schedules.

- **Enhanced Healthcare Outcomes**: Improve patient care through better management and access to health information.

Target Users

- **Patients**: Those needing easy access to their health information and appointment scheduling.

- **Healthcare Providers**: Doctors, and administrators who require efficient tools for patient and treatment management.

Key Features

Web Application:

- **Role-Based Access**: Separate user interfaces for patients, doctors, and administrators.

- **Dynamic Content Management**: Uses a MSSQL database to manage patient records and treatment plans.

- **Health Alerts**: Receive health alerts based on patient data analysis (For example, be cautious and consult your doctor about the risk of developing Type 1 Diabetes or heart disease).

- **Appointment Scheduling**: Allows patients to book and manage appointments, which are overseen by administrators.

Desktop Application:

- **Enhanced Record Management**: Advanced features for managing patient information.

- **Reporting Tools**: Provides updates on patient visits, create treatment plan and treatment outcomes.

Database:

- **Complex Relationships**: Utilizes many-to-many relationships for comprehensive data management.

- **Large Data Set Handling**: Manages over 20,000 rows of data for thorough testing.

- **Data Views**: Offers views for aggregated and statistical data analysis.

Algorithmic Functionality:

- **Recommendation System**: Suggests treatments based on patient history.

- **Design Pattern Implementation**: Employs Strategy and Abstract Factory patterns for health alerts and appointment scheduling.

Project Requirements Fulfilment

Security and Privacy:

- **Enhanced Security System**: Patients can grant access to their medical records to doctors, selected by doctor's license number, enhancing privacy and security.

SQL Database:

- **Efficient Data Storage**: The project will leverage a SQL Database for storing and managing data efficiently, adhering to best practices in database management.

Development Approach

- **Modular Development**: Begins with core functionalities and iteratively adds more complex features.

- **Iterative Testing**: Ensures each module functions correctly before moving on.

- **Simplification and Scalability**: Focuses on easy-to-implement security measures initially, with plans for future enhancements.

Conclusion

UHMS is designed to revolutionize healthcare management by providing an integrated, secure, and easy-to-use platform for managing medical information. The primary objective of the UHMS is to facilitate real-time access to medical reports and streamline the prescription process. It offers a significant advantage for patients, particularly in understanding medication regimens, which is especially beneficial for those managing multiple medications and prone to forgetting dosages. This system is designed to enhance the doctor-patient relationship by simplifying interactions and communication. Furthermore, the integration of pre-recorded allergies and medical histories allows doctors to provide more accurate and personalized medical advice and treatment options.

Additionally, in surgical contexts, the system enables doctors to quickly review a patient's medical

background, ensuring a comprehensive understanding of their health status in a timely manner.

Therefore, the UHMS stands as a pivotal innovation, promising to revolutionize healthcare delivery

by ensuring personalized, efficient, and informed medical care for every patient.