PakMedRecord

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PROBLEM STATEMENT

In Pakistan, the lack of a centralized medical records system leads to inefficiencies and potential risks in healthcare delivery. Patients are required to undergo redundant tests and procedures at different hospitals due to the absence of a unified database. This fragmented approach results in wasted resources, delayed treatment, and compromised patient care.

SOLUTION

The implementation of PakMedRecord, a centralized medical records system, will address these challenges by securely storing patient information and enabling seamless access for authorized healthcare providers across various hospitals. This system will streamline healthcare services, reduce duplication of tests, improve patient outcomes, and enhance overall healthcare delivery efficiency.

FUNCTIONAL REQUIREMENTS

Secure Data Storage: Implement robust security measures to safeguard patient information against unauthorized access or breaches.

Centralized Database: Develop a centralized repository to store comprehensive patient records, including medical history, allergies, family history, vaccinations, and test reports.

Interoperability: Ensure compatibility and seamless integration with existing hospital systems to facilitate easy access and data sharing among healthcare providers.

Data Standardization: Establish standardized formats and protocols for data entry and storage to maintain consistency and facilitate data exchange between different healthcare facilities.

Backup and Recovery: Implement regular backup procedures and disaster recovery plans to prevent data loss and ensure system reliability.

Training and Support: Provide comprehensive training and support for healthcare professionals to effectively use and navigate the PakMedRecord system, promoting its adoption and utilization across healthcare facilities.

NON-FUNCTIONAL REQUIREMENTS

Security: The system must ensure the confidentiality, integrity, and availability of patient information.

Scalability: The system must be able to handle an increasing number of users, patient records, and concurrent connections without a significant decrease in performance.

Reliability: The system must have a high level of reliability, ensuring minimal downtime and a low probability of data loss.

Usability: The user interface must be intuitive, and users should be able to navigate and perform tasks efficiently with minimal training.

Compliance with Regulations: The system must comply with relevant healthcare data protection and privacy regulations, such as HIPAA or other local standards.

PROJECT FEATURES

Patients' Allergies: Centralized recording of patients' allergic reactions to medications or substances.

Report of Minerals and Vitamins: Comprehensive documentation of patients' mineral and vitamin levels for nutritional assessment.

Patient Medical History: Detailed electronic record encompassing a patient's past illnesses, surgeries, and treatments.

Patient's Family Medical History: Systematic collection of health information related to the patient's family members to identify potential genetic factors.

Track of Vaccines/Check and Balance of Vaccines: Monitoring and tracking system for vaccines administered to patients, ensuring timely and accurate vaccination records.

Patients' Appointments History and Pending Appointments: Logging past appointments for reference and tracking upcoming appointments to ensure continuity of care.

All Past Medical Reports on the System: Digitized storage of all previous medical reports, mitigating the risk of paper-based report loss by patients.

STAKE HOLDERS AND THEIR ROLES

Patients:

Access and Control: Empower patients to manage their personal information, access medical records, and communicate securely with healthcare providers.

Doctors:

Record Management: Efficiently upload, manage, and access patient records, fostering seamless collaboration among healthcare professionals.

Nurses:

Patient Care: Utilize the system to monitor patient progress, update records, and facilitate communication within the healthcare team.

Administrators:

System Administration: Oversee user account management, configure system settings, and ensure the overall functionality and security of the application.

Regulatory Compliance Officers:

Regulatory Adherence: Monitor and enforce compliance with healthcare data protection and privacy regulations, ensuring the system aligns with standards.

Healthcare Institutions:

Implementation Oversight: Ensure effective implementation and usage of the system, aligning with institutional policies and supporting staff in utilizing the application.

TECHNOLOGY

Database: MongoDB

- MongoDB will serve as the primary database to store and manage the structured healthcare data efficiently.

Frontend: ReactJS

- The user interface and interactive elements of the healthcare app will be developed using ReactJS, providing a dynamic and responsive user experience.

Backend: Node.js and Express

- The backend of the healthcare app will be powered by Node.js, and the Express framework will be utilized to create a robust and scalable server architecture. This combination enables efficient handling of data requests and seamless communication between the frontend and the MongoDB database.