**Preliminary Design Review of a Hospital Management System (HMS)**

This Preliminary Design Review (PDR) for a Hospital Management System (HMS) will be performed to confirm that it fits the hospital's needs, is technically feasible, and has a user-friendly interface. Patient registration, appointment scheduling, patient medical records, prescriptions, billing, and report generating should all be handled by the HMS. The system's functional and technical requirements, user interface, performance, reliability, security, maintenance, support, and training manuals will be evaluated during this examination.

**Functional Requirements**

The HMS will fulfill the hospital's functional criteria. It will have a patient registration module for storing patient information, scheduling appointments, and medical history. It will have a module for keeping track of doctor's notes, prescriptions, and medicines. A billing module will be provided by the HMS to manage patient billing and payment processing. It will produce reports for patient records, billing, and other vital hospital data.

**Technical Requirements**

The HMS will satisfy technological criteria such as integrating with other hospital systems, managing large amounts of data, being secure, and expandable. The system will be built to handle enormous amounts of data, and the architecture will be simple enough to integrate with other hospital systems. The system will be secure, with safeguards in place to prevent unauthorized access or alteration of patient data. To allow for future development and growth, the system will be scalable.

Design Specifications: The Healthcare Management System will be a web-based application developed using the following technologies:

* Front-end: HTML, CSS, JavaScript, Bootstrap
* Back-end: PHP and Laravel
* Authentication and access control: JSON Web Tokens (JWT)

**User Interface**

The user interface will be welcoming, straightforward, and simple to use. It will provide the user with clear instructions and feedback. For processes like as appointment scheduling, patient registration, and billing, the system should be structured to minimize user error and give clear instructions.

**Front-end User Interface:** This component will be responsible for providing a user-friendly interface to the users, allowing them to interact with the system. It will be developed using modern web technologies such as Bootstrap and CSS.

**Backend Services:** This component will consist of several microservices that will be responsible for performing various tasks such as patient record management, appointment scheduling, and billing. These services will be developed using php Laravel and will be deployed on a cloud-based platform called heroku.

**Database:** This component will consist of a centralized database that will store all the patient records, medical histories, billing information, and appointment schedules. We have proposed to use a cloud-based database service such as Remote MySQL to ensure high availability and scalability.

**Performance and Reliability**

The HMS will work properly and is dependable, especially when dealing with sensitive patient data. The system will be built to have as little downtime as possible, and the architecture will be highly available. The system's error rate will be minimal, and safeguards will be in place to avoid data loss or corruption.

**Security and Privacy**

The HMS will be safe and secure, with no unauthorized access or modification of patient data. Data protection and privacy rules will be followed by the system. To safeguard data in transit and at rest, the system will employ encryption. Access controls will be included in the system to limit access to sensitive information.

**Maintenance and Support**

With regular software upgrades, the HMS will be simple to maintain and update. Users will be able to rely on the system's technical help. To reduce downtime in the case of a system breakdown, the system will have a backup and disaster recovery strategy in place.

**Training and Documentation**

The HMS will include extensive documentation and training resources to assist users in understanding and efficiently using the system. Users will be trained, and documentation will be clear and succinct, with step-by-step instructions for typical activities.

**Conclusion**

This Hospital Management System (HMS) Preliminary Design Review (PDR) will analyze the system's functional and technical requirements, user interface, performance, reliability, security, maintenance, support, and training materials. The HMS will satisfy the needs of the hospital, be technically possible, have a user-friendly interface, be dependable, secure, and comply with data protection and privacy rules. The system will be simple to maintain and upgrade, with extensive user training and documentation.