**Part 4**

**Preliminary Design Review on Healthcare Systems**

Saint Leo University

Course/Number: [Fundamentals Software Engineer COM-560-MSC01](https://saintleo.brightspace.com/d2l/home/144112)

Instructor Name: [Adams, Joshua](javascript://)

March 28th, 2023

**Dev\_Team\_2**

Aravind Vudatha

Lakshmi priya Mutyala

Vamshi Gone

Gopi Mandapati

PRELIMINARY DESIGN REVIEW

# Introduction

A Preliminary Design Review (PDR) for Healthcare Systems is a critical phase in the development of a new healthcare system or the improvement of an existing one. During this phase, the project team presents the initial design and development plans to stakeholders, including clinicians, patients, administrators, and IT professionals. The goal of the PDR is to obtain feedback and approval for the proposed design before proceeding to the detailed design phase.

The Hospital Management System is a web-based application that is designed to help manage the daily operations of a hospital or healthcare center. This Preliminary Design Review (PDR) will evaluate the preliminary design of the

system to ensure that it meets the system requirements and is technically feasible.

The proposed system has three levels of login - patient, doctor, and admin, with each level having its own set of functionalities.

1. Architecture:The Hospital Management System will be developed using the Model-View-Controller (MVC) architecture. MVC is a popular design pattern that separates the application into three main components - Model, View, and Controller. The Model represents the data and business logic of the application, the View represents the user interface, and the Controller acts as an intermediary between the Model and View.
2. The front-end of the system will be developed using HTML, CSS, and

JavaScript, while the back end will be developed using PHP and MySQL. PHP is a server-side scripting language that is widely used for web development, while MySQL is a popular open-source relational database management system.

# Modules

The Hospital Management System will consist of three main modules - Patient, Doctor, and Admin. Each module will have a separate controller to manage user requests and interact with the database.

The Patient module will allow patients to register and book appointments with doctors. The module will also allow patients to view their appointment schedules and medical records.

The Doctor module will allow doctors to view patient records and prescribe medication. The module will also allow doctors to manage their schedules and availability.

The Admin module will have complete control over the system. Admin will be able to manage patient data, doctor details, and appointment scheduling. Admin will also be able to add, update, and delete patient and doctor records.

1. **Database Design:** The Hospital Management System will use a MySQL database to store patient data, doctor details, and appointment schedules. The database will consist of the following table.
2. **Patients** - This table will store patient information such as name, email, phone number, and address.
3. **Doctors** - This table will store doctor details such as name, contact information, availability, and specialization.
4. **Appointments** - This table will store appointment details such as date, time, patient ID, and doctor ID.
5. **Prescriptions** - This table will store prescription details such as medicine name, dosage, and frequency.
6. **Security:** The Hospital Management System will implement various security measures to ensure that patient data is secure and only accessible to
7. **Authorized users.** The system will use password hashing to store user passwords securely in the database. Access to sensitive information such as patient medical records and prescription history will be restricted to
8. **User Interface:** The Hospital Management System will have a user-friendly interface that is easy to use and intuitive. The front-end will be designed using HTML, CSS, and JavaScript, and will have a responsive design that is compatible with different devices and screen sizes.

# Conclusion

In conclusion, the Hospital Management System has been designed using the MVC architecture, with separate controllers for each module. The system will use a MySQL database to store patient data, doctor details, and appointment schedules. Security measures such as password hashing and access restrictions will be implemented to ensure the confidentiality and integrity of patient data. The system will have a user-friendly interface that is easy to use and compatible with different devices and screen sizes. By meeting these design requirements, the Hospital Management System will be able to provide an efficient and effective way to manage patient records, appointments, and prescriptions, while enhancing the quality of healthcare services provided. The PDR has confirmed that the proposed system is technically feasible and meets the system requirements.

**References**

Alaa Alzougool, Zakaria Saleh, Abdullah Alshawi “*Preliminary Design Review of an Electronic Health Record System”*

“*Comparative Health Systems: Global Perspectives*” by James A. Johnson and Carleen H. Stoskopf.

<https://www.sciencedirect.com/topics/engineering/preliminary-design-review>

“*Healthcare Systems: A Global Survey*” by Khi V. Thai and Thomas E. Getzen.

Gould, J. D., & Lewis, C. (1985). “*Designing for usability: key principles and what designers think*”. Communications of the ACM, 28(3), 300-311.