TITLE:

Developing a Secure and Efficient Hospital Management System using a Relational Database Management System

A CAPSTONE PROJECT REPORT

Submitted to

SAVEETHA INSTITUTE OF ENGINEERING

DATABASE MANAGEMENT SYSTEM FOR DATA TRANSFORMATION

By

SONA.S(192220095),R.YUGITHA (192220089), DHANUSHIA.J (192220097)

Supervisor

MR.VIRUSHABADOSS

SIMATS ENGINEERING SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES, CHENNAI – 602 105

OBJECTIVE:

This project aims to design and implement a comprehensive Hospital Management System (HMS) utilizing a relational Database Management System (DBMS) to streamline hospital operations, enhance data management, and improve patient care.

The system will focus on:

1.Efficient data storage, retrieval, and manipulation: Utilizing a central DBMS to store and manage patient information, staff records, inventory data, financial transactions, add other relevant hospital data.
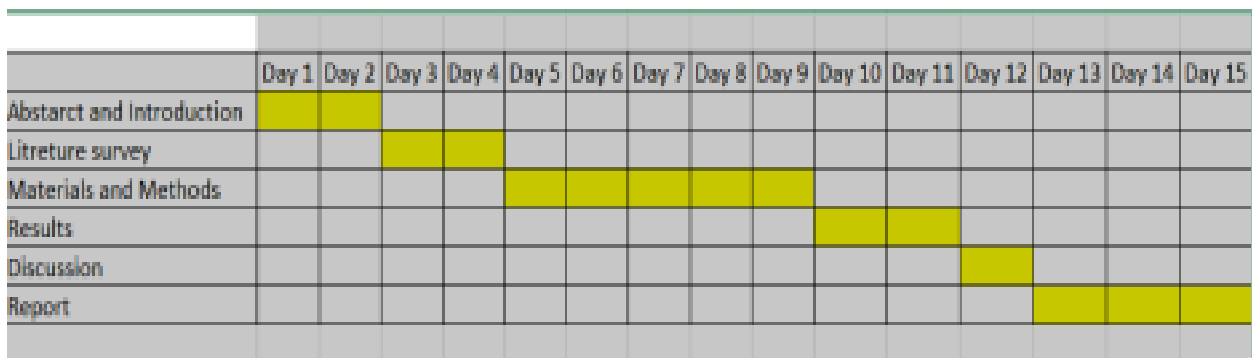
2.Improved data security and privacy: Implementing robust access control mechanisms, data encryption techniques, and regular backups to safeguard sensitive patient information.

3.Automation of key functionalities: Automating tasks like patient registration, appointment scheduling, billing, and medical record management for increased efficiency and reduced errors.

4.User-friendly interfaces: Providing intuitive interfaces for various user roles (doctors, nurses, administrators, and patients) to facilitate system interaction.

5.Data-driven decision making: Generating reports and analyzing data to gain insights into hospital performance, identify trends, and support informed decision-making.

Gantt Chart:

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15
Abstarct and Introduction	■	■													
Litreture survey			■	■											
Materials and Methods					■	■	■	■	■						
Results										■	■				
Discussion												■			
Report													■	■	■

INTRODUCTION:

Hospitals manage vast amounts of sensitive data crucial for patient care, administrative tasks, and financial management. Manual data handling systems are often inefficient, prone to errors, and hinder data accessibility.

Implementing a DBMS-based HMS can address these challenges by:

Centralized data repository: Streamlining data storage and retrieval, eliminating redundancy, and ensuring data consistency.
**Improved data security:** Implementing robust security measures to protect sensitive patient information and comply with regulations.

Enhanced efficiency: Automating workflows, reducing manual tasks, and facilitating faster
access to critical data.
Informed decision-making: Generating reports and analyzing data to gain

insights into hospital performance, resource allocation, and patient trends.

Flowchart:
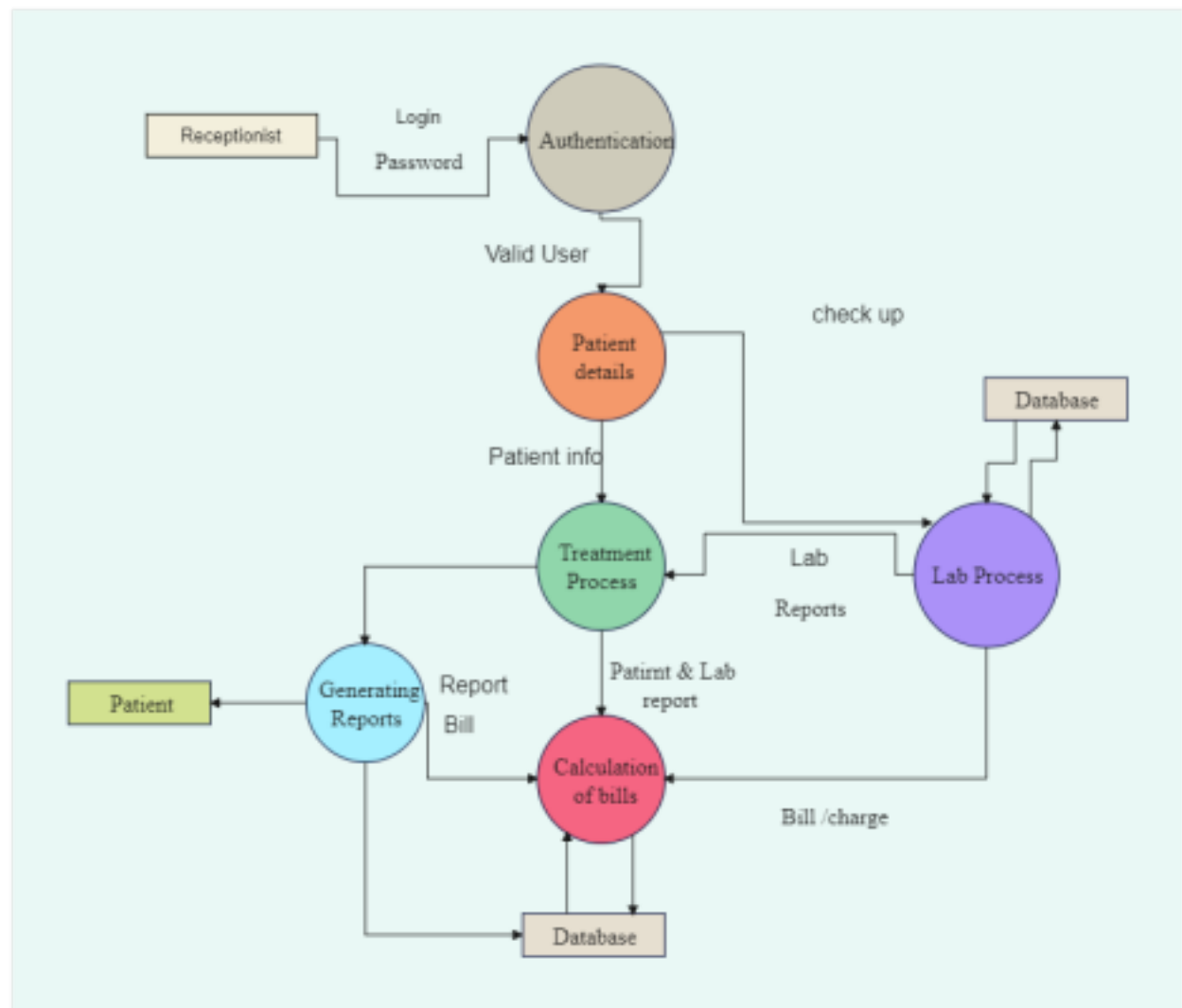
LITERATIVE REVIEW:

1.Title: Evaluating the Impact of Hospital Management Information Systems (HMIS) on Hospital Performance: A Review of the Literature (Link: https://brieflands.com/articles/jjhs-119762)

Summary: This review analyzes studies highlighting the significant impact of HMIS on hospital performance in areas like efficiency, quality of care, financial outcomes, and patient satisfaction. It emphasizes careful planning, training, and ongoing support for successful implementation.

2.Title: The Role of Data Integration in Hospital Management Systems: A Literature Review (Link: https://www.researchgate.net/publication/338247809_A_literature_review_of_current_technologies_on_health_data_integration_for_patient-centered_health_management)

Summary: This review explores the challenges and opportunities of data integration within an HMS. It emphasizes the importance of data standardization, interoperability, and data governance for seamless information flow and better decision-making.

3.Title: The Impact of Clinical Decision Support Systems (CDSS) integrated with Hospital Management Systems on Clinical Outcomes: A Systematic Review (Link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3078663/)

Summary: This review examines the effectiveness of CDSS integrated with HMS in improving clinical outcomes. It finds that CDSS can positively impact medication safety, diagnostic accuracy, and treatment adherence, but their effects vary depending on specific functionalities and implementation strategies.

4.Title: User Acceptance of Hospital Management Systems: A Review of Factors Influencing Adoption (Link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6993299/)

Summary: This review identifies factors influencing user acceptance of HMS, including system usability, perceived usefulness, training, and change management strategies. It emphasizes addressing user needs and concerns to ensure successful HMS adoption and maximize benefits.