Case Study
on

mediASSIST: Modernizing Healthcare Management

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INTRODUCTION

- MediAssist is a **web-based Hospital Management System** designed to streamline healthcare operations.

- It digitizes key processes such as patient registration, appointments, prescriptions, and health monitoring.

- The system provides a secure, centralized platform connecting patients and hospital administration.

- MediAssist enhances efficiency and user experience by integrating modern web technologies and AI-based assistance.

ABSTRAT

- **MediAssist** is a web-based Hospital Management System developed to streamline and digitalize core healthcare operations.

- It enables efficient management of patients, appointments, prescriptions, and medical records through a centralized platform.

- MediAssist aims to improve operational efficiency, data accuracy, and overall user experience for both patients and administrators.

- This Project is developed with **MySQL, Spring boot for back end and web technologies**.

What we are going to build: Client Requirement

- The client requires a **Hospital Management System** that enables efficient management of patient details, appointments, medicines, prescriptions, and health records.

- The system should provide a centralized platform where patients and hospital administrators can interact seamlessly.

- Patients should be able to track their health information digitally, while administrators can manage hospital operations effectively.

- The solution should be secure, user-friendly, and scalable for future enhancements.

PROJECT OBJECTIVES

- To provide a secure and centralized platform for managing patient records, appointments, medicines, and prescriptions.
- To enable patients to **book appointments, track health details, and manage medical records** digitally.
- To assist hospital administrators in **monitoring patients, appointments, and notifications** effectively.
- To integrate **health analytics and visualization** for better understanding of patient health trends.
- To incorporate an **AI-based medical chatbot** for instant assistance and improved user engagement.

SCOPE OF PROJECT

- The project covers the **digital management of patient-related hospital activities**, excluding external hospital systems.
- It focuses on **single-hospital usage**, where patients and administrators interact within one platform.
- The system handles **appointment scheduling, prescription records, medicine tracking, and notifications** only within the application.
- Medical diagnosis and treatment decisions are **not automated** and remain the responsibility of healthcare professionals.
- The current implementation operates on a **local server environment**, intended for academic and prototype use.

Technologies Used

- **Frontend**: HTML, CSS, JavaScript
- **Backend**: Java, JDBC, Spring Boot Framework
- **Build Tool**: Maven
- **Database**: MySQL
- **IDE &Tools**: Eclipse/STS , Browser(Chrome)

System Requirements

- **Operating System:** Window/Linux
- **Backend Environment:** Java 17 with Spring Boot
- **Database Server:** MySQL
- **Web Server:** Apache Tomcat(embedded)
- **Browser:** Google Chrome

PROJECT MODULE

- User (Patient) Module
- Admin Module
- Appointment Management Module
- Medicine Management Module
- Prescription Management Module
- Dashboard & Analytics Module
- Notification Module
- AI Chatbot (mediBot) Module

DATABASE SCHEMA

MediAssist – Database Schema
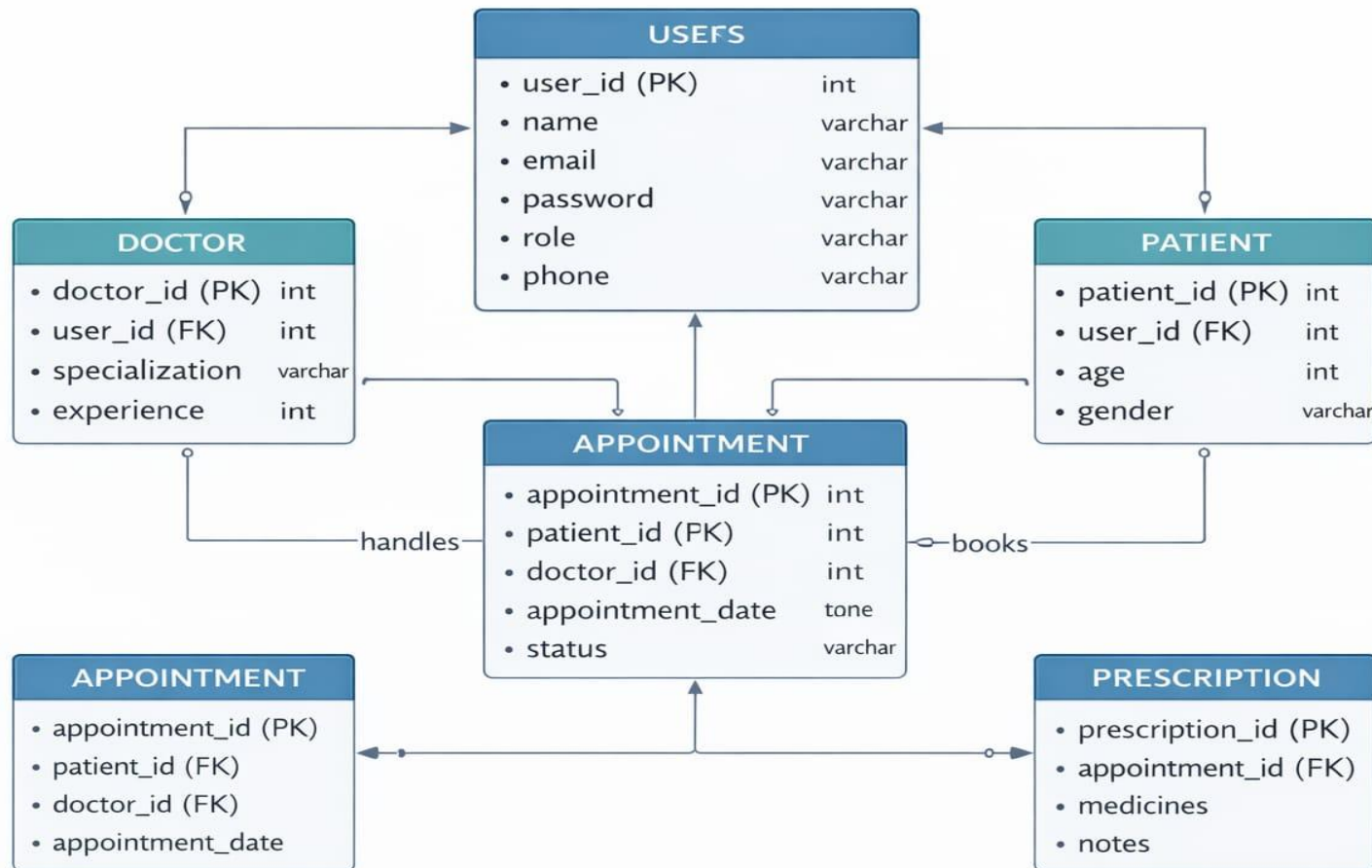
SYSTEM ARCHITECTURE
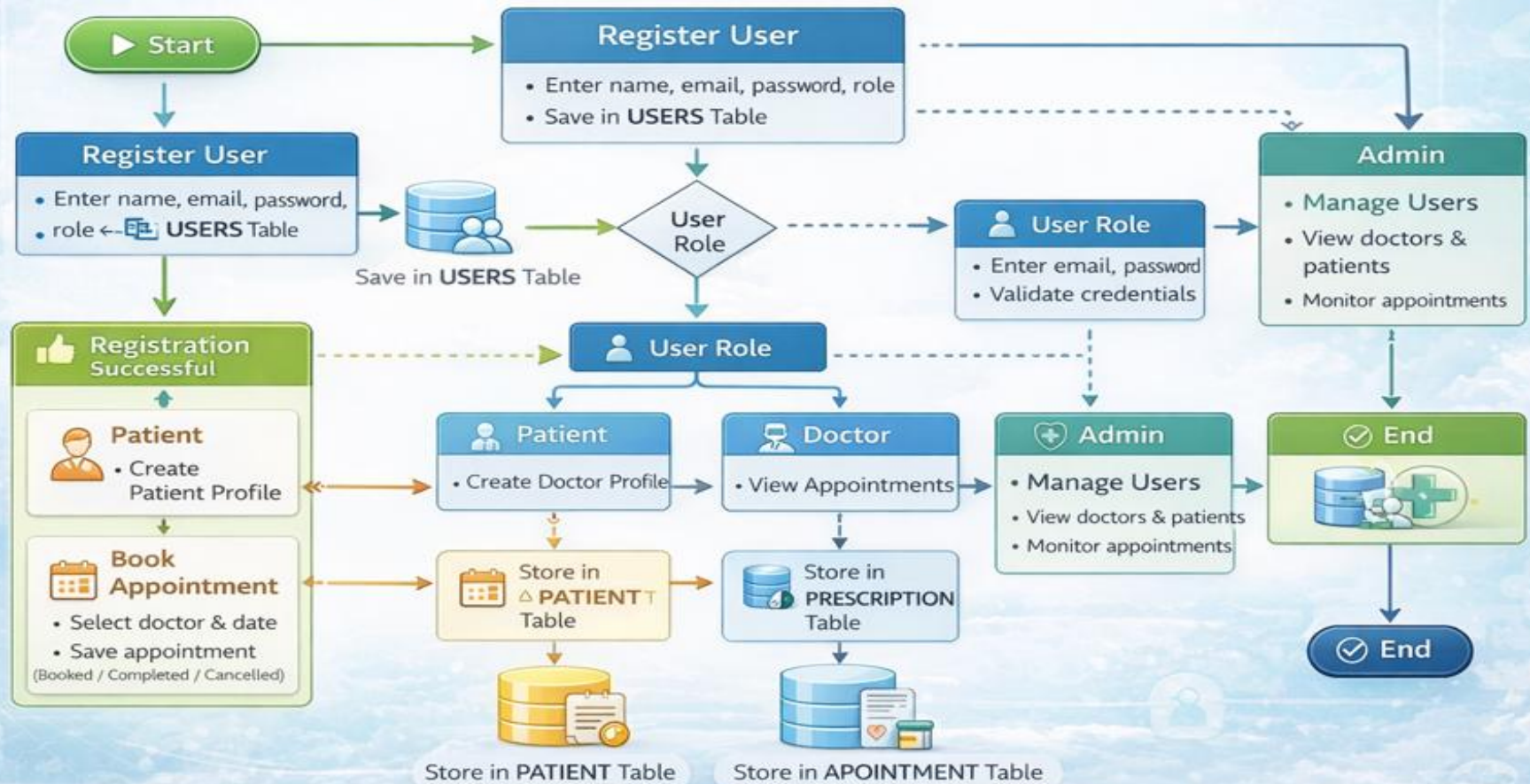
ADMIN MODULE

- **Admin Login:**
  Provides secure authentication to allow only authorized administrators to access and manage the system.
- **User Management:**
  Allows the admin to view, manage, and monitor registered patient records.
  Admin can maintain accurate user information within the system.
- **Appointment Control:**
  Enables the admin to schedule, reschedule, and cancel patient appointments.
  Helps manage doctor availability and ensures smooth hospital operations.

USER MODULE

Login & Registration:
- Allows users to securely create an account and access the system using valid credentials.

Dashboard:
- Provides an overview of health information, appointments, and system updates in a single view.

Appointments:
- Enables users to book, view, and track appointment status with doctors.

Prescriptions:
- Allows users to upload, view, and manage digital prescription records.

AI Chatbot:
- Assists users with basic medical queries and system guidance through interactive responses.

AUTHENTICATION

Secure Login:

Ensures that only authorized users can access the system by validating credentials against the database.

Controller-Based Validation:

Authentication logic is handled in backend controllers to verify user details securely.

Role-Based Routing:

Directs users to appropriate pages based on their role, such as admin or patient.

LOGIN & REGISTER

Login

Email

Password

Login

New user? **Register here**

Patient Registration

Sharathika Renganathan

sharathika@gmail.com

·····

08925788330

Register

Already registered? Login

DASHBOARD

DASHBOARD

MEDICINES

PRESCRIPTION

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- Dashboard
- Medicines
- **Prescription**
- Appointments
- Notifications
- MediBot
- Personal details
- Logout

My Medical Records
Digital records of your medical history

+ Upload New

Upload Prescription

📁
Click to upload image
Supports JPG, PNG (Max 5MB)

Doctor Name
Dr.

Problem / Diagnosis
e.g. Fever, Fracture

Hospital / Clinic
Hospital Name

Date of Prescription
18 - 12 - 2025

Notes (Optional)
e.g. Fever medication

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- Dashboard
- Medicines
- **Prescription**
- Appointments
- Notifications
- MediBot
- Personal details
- Logout

Hospital Name

18 - 12 - 2025

Notes (Optional)
e.g. Fever medication

Cancel   **Save Prescription**

Dr. Shalini
Ishwarya
PCOD
📅 **Date:** 17 December 2025

View Details   ✕

APPOINTMENTS
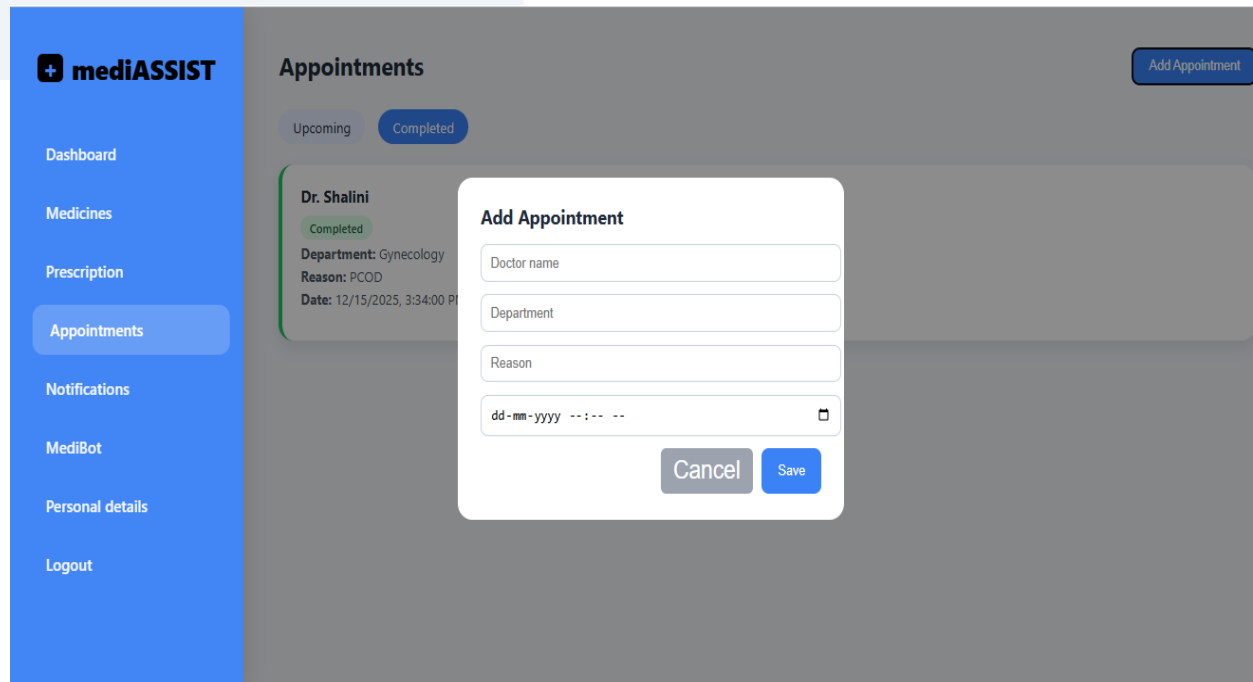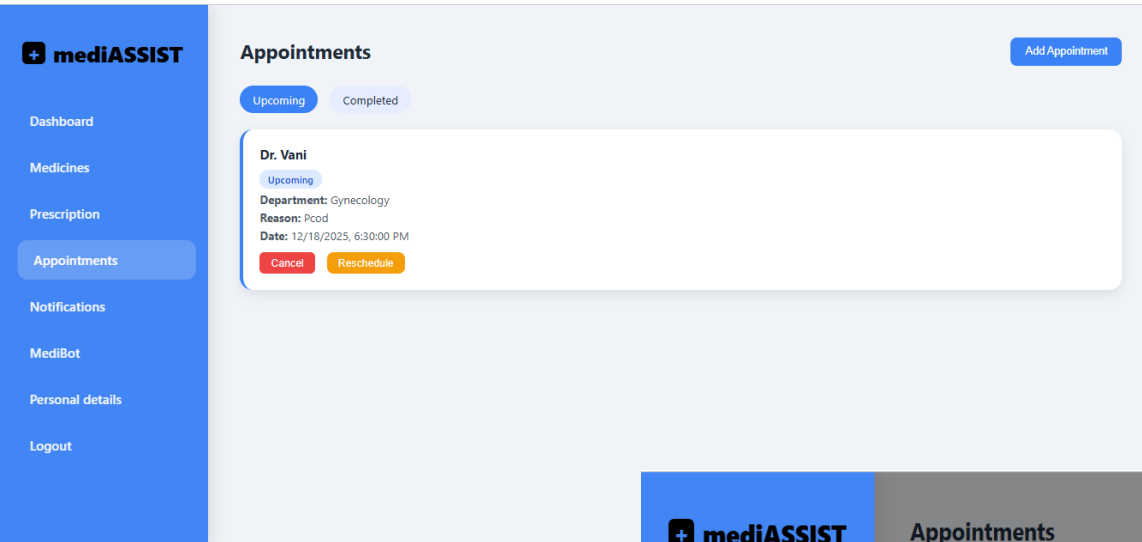
NOTIFICATIONS

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Dashboard

Medicines

Prescription

Appointments

Notifications

MediBot

Personal details

Logout

Notifications

Alerts, reminders and updates

Low Stock Alert

You are running low on **Calcium Citrate**. Only 4 units left.

Stock Check

Medicine Reminder

Time to take **ferrous bisglycinate** (After Food)

Scheduled: 8:30 AM

Medicine Reminder

Time to take **Calcium Citrate** (After Food)

Scheduled: 8:30 AM

Appointment Today

You have an appointment with **Dr. Vani** today!

Time: 6:30 PM

MEDIBOT

PERSONAL DETAILS

ADMIN

ADMIN CONTROLLER

ADMIN DATABASE

USER DATABASE

USER LIST

FUTURE ENHANCEMENTS

Payment Gateway Integration: Enables secure online payments for services such as appointment booking and medicine purchases.

AI-Based Prescription Processing: Automatically extracts medicine details from uploaded prescriptions using inbuilt AI features and adds them to the medicine schedule.

Email / SMS Alerts: Sends automated notifications for appointment reminders, medicine intake alerts, and important health updates.

Cloud Deployment: Deploys the application on cloud platforms to ensure scalability, reliability, and global accessibility.

CONCLUSION

- MediAssist successfully provides a digital solution for managing hospital operations in an efficient and organized manner.
- The system simplifies patient management, appointment scheduling, prescription handling, and health monitoring through a centralized platform.
- By integrating modern web technologies and AI-based features, MediAssist enhances usability, accuracy, and patient engagement.
- The modular and scalable design makes the system adaptable for future advancements in healthcare management.

LINKS

GITHUB :

https://github.com/Sharathika/Sharathika_43130731

CAPSTONE PROJECT VIDEO:

https://drive.google.com/file/d/1ZC-NHIR09j3-U_zL9erK0DeZoBbGsqQ0/view?usp=drivesdk

THANK YOU