Clinic Management web application

Group: 06

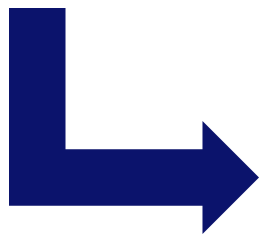|	
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TABLE OF CONTENTS
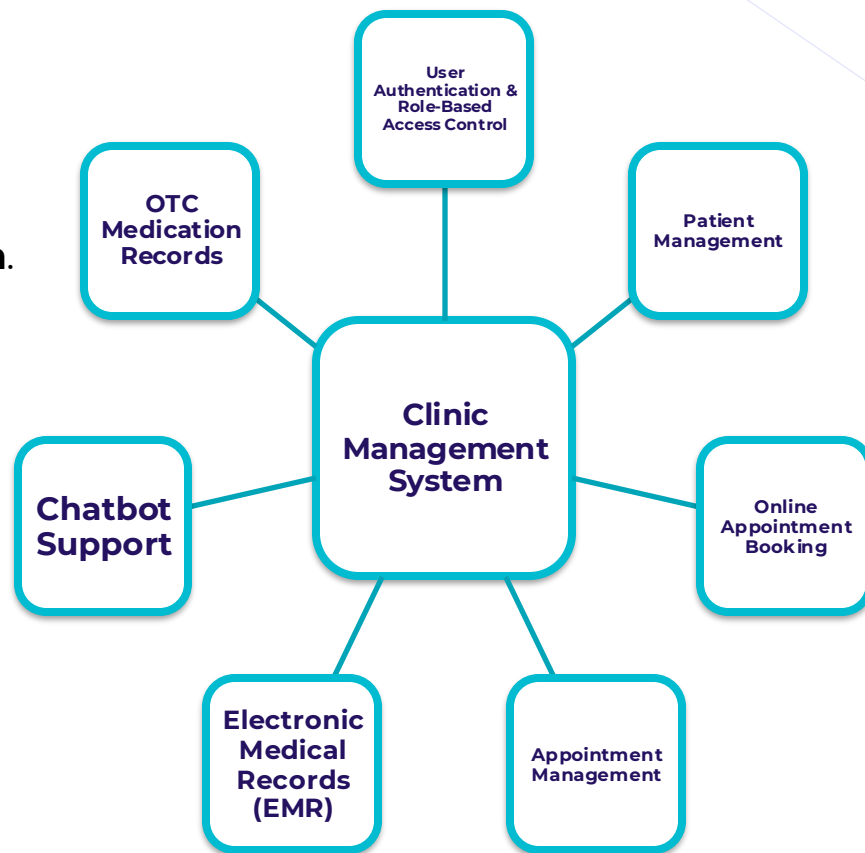
01

Introduction

Problem statement

- **Outdated** clinic management system
- **Limited** functionality
- **Manual** booking, **unstable**
- **Shortage** in database
- **Time consuming** with traditional management method

Modern – Robust Features rich Management application

Objective & Scope

- **Design**, **develop**, **deploy** an **improved** web-based **clinic management system**.
- **Streamline** clinic operations.
- **Enhance** patient experience.
- Provide **better data management** capabilities.
- Core functionalities:

Clinic Management System with connections to:
- User Authentication & Role-Based Access Control
- Patient Management
- OTC Medication Records
- Online Appointment Booking
- Chatbot Support
- Electronic Medical Records (EMR)
- Appointment Management

Approach

Agile development methodology:

- Requirement Analysis and Design
- Database Development
- Backend API Development
- Frontend UI Development
- Integration and Testing
- Deployment

Technology stack

- **Frontend**: React, TypeScript, Node.js/npm, Axios
- **Backend**: Python, FastAPI, SQLAlchemy, Pydantic, Uvicorn, python-jose, passlib/bcrypt, and Google Generative AI SDK
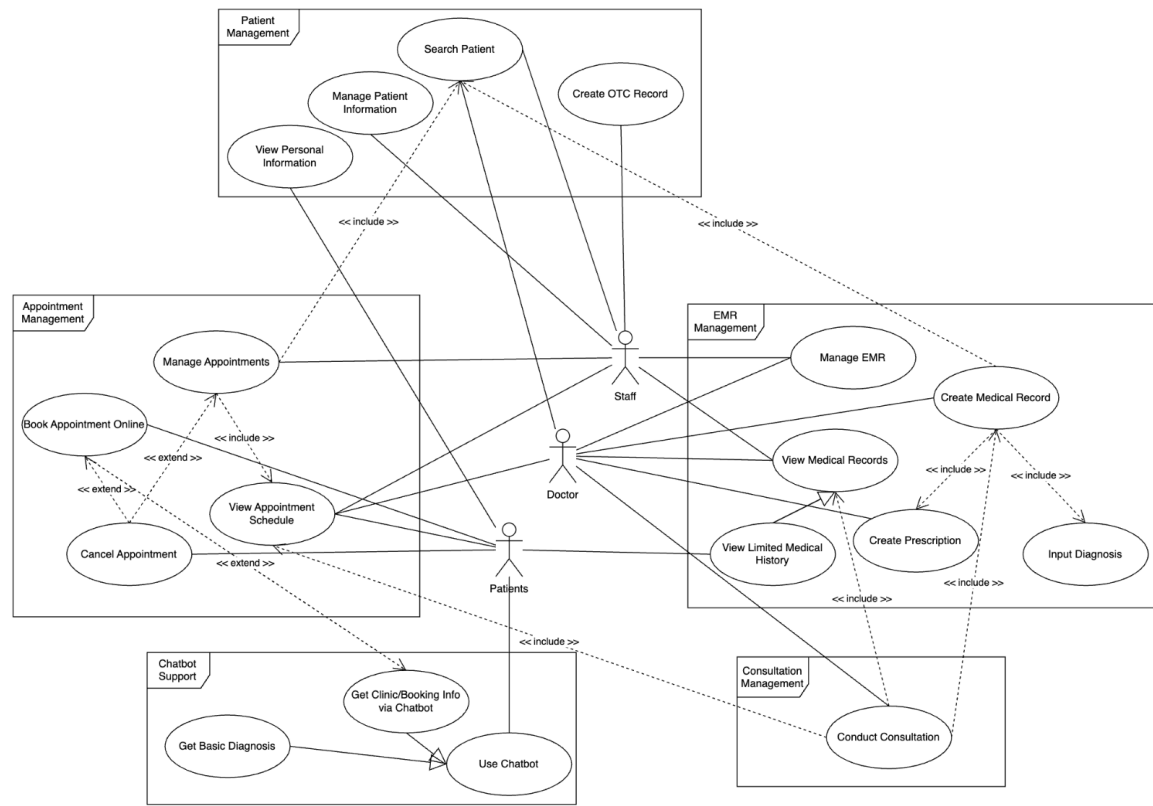- **Database**: PostgreSQL.

02

Requirement Analysis

Overall Use Case Diagram

Use case specifications

Already presented

03
Technology

Technology used

04

Application Development & Deployment
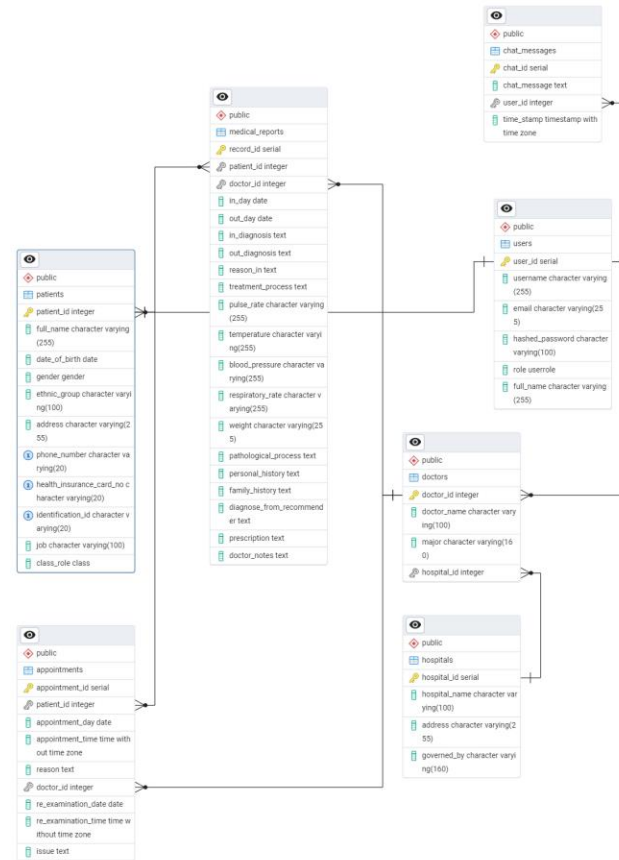
Database structure

Tables :

- Users
- Patients
- Doctors
- Appointments
- Medical_reports
- Hospital
- Chat_massages

Deployment

Clinic Management Web App

05
Conclusion

Conclusion

Clinic Management System	Architecture & Technology	Security & Access Control
· **Patient** Management · **Online appointment** booking · **Electronic medical record** management · **Chatbot** for user support	· **Client-server:** React + FastAPI · SQLAIchemy, JWT, Pydantic · GitHub (Vercel + Render)	· **Role-based** access · Ensures **appropriate and secure access** to features and data

Introduction   Requirement Analysis   Technology   Application   Conclusion

Conclusion

Deployment Details

- **Frontend** hosted on Vercel: _https://clinic-management-nine-lime.vercel.app/_
- **Backend** hosted on Render: _https://clinic-management-be3h.onrender.com/_
- **Database**: Google Cloud SQL for PostgreSQL
- **CORS** policies and environment variables ensure seamless frontend-backend integration

Outcomes

- **Streamlined** clinic operations and data management
- Enhanced **service delivery** and **user experience**
- **Intuitive** and **user-friendly interface**
- System is **stable**, **fully deployed**, and **ready** for real-world use

Future development

- Advanced EMR Features

- Enhanced Patient Portal

- Telemedicine Capabilities

- Inventory Management

- Mobile Application

- Enhanced AI Chatbot

THANK YOU FOR LISTENING