PROJECT REPORT

On

Online Doctor Appointment

Submitted in partial fulfilment of the requirement for the
Course BEE (22CS026) of

COMPUTER SCIENCE AND ENGINEERING
B.E. Batch-2022

in

Jan -2025

Under the Guidance of
Name of the Project Guide
Designation of the Project Guide

Submitted By

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(Annexure –C)

CERTIFICATE

This is to be certified that the project entitled "Online Doctor Appointment" has been submitted for the Bachelorof Computer Science Engineering at Chitkara University, Punjab during the academic semester January 2024- May-2024 is a bonafide piece of project work carried out by "Abhinav Saini(2210990039), Aditya Jaiswal(2210990990), Anant Singh(2210990108),Amandeep Singh(2210990099)" towards the partial fulfillment for the award of the course Integrated Project (CS 203) under the guidance of "Mr.Saqlainkoser Ansari" and supervision.

Sign. of Project Guide :

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(Annexure –D)

CANDIDATE'S DECLARATION

We,AbhinavSaini(2210990039,AdityaJaiswal(2210990990),AnantSingh(2210990108),Amandeep Singh(2210990099), B.E.-2021 of the Chitkara University, Punjab hereby declare that the Integrated Project Report entitled "Online Doctor Appointment" is an original work and data provided in the study is authentic to the best of our knowledge. This report has not been submitted to any other Institute for the award of any other course.

Sign. of Student 1	**Sign. of Student 2**	**Sign. of Student 3**	**Sign.of Student 4**
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Place:

Date:

(Annexure -E)

ACKNOWLEDGEMENT

It is our pleasure to be indebted to various people, who directly or indirectly contributed in the development of this work and who influenced my thinking, behavior and acts during the course of study.

We express our sincere gratitude to all for providing me an opportunity to undergo Integrated Project as the part of the curriculum.

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Lastly, We would like to thank the almighty and our parents for their moral support and friends with whomwe shared our day-to day experience and received lots of suggestions that improve our quality of work.

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1. **Abstract**- This project focuses on developing an online doctor appointment system that allows patients to book appointments with doctors conveniently. The system streamlines the appointment process, reduces waiting times, and enhances efficiency in healthcare services. The project includes features such as user authentication, doctor availability tracking, appointment scheduling etc.

2. Introduction to the project

2.1 Background- Digitization has revolutionized healthcare, improving efficiency and accessibility. Online systems simplify booking appointments, accessing records, and consulting doctors. These platforms reduce errors, save time, and enhance user convenience. Appointment systems streamline schedules, reduce overcrowding, and improve communication between patients and healthcare providers, making healthcare more effective.

2.2 Problem Statement -Manual appointment systems face issues like long waiting times, booking errors, and inconvenience for remote patients. The proposed solution is a user-friendly web application that allows patients to book, reschedule, or cancel appointments and helps doctors manage their schedules efficiently.

3. Software and Hardware Requirement Specification

3.1 Methods:

The system is developed using the Agile methodology, allowing iterative development and testing to ensure a robust final product.

3.2 Programming/Working Environment:

- **Frontend: HTML, CSS, JavaScript (React for dynamic UI).**
- **Backend: Python (Django) or Node.js (Express.js).**
- **Database: MySQL or MongoDB.**
- **Tools: Visual Studio Code, GitHub, Postman (API testing).**

3.3 Requirements to Run the Application:

- **Software:** Web browser (Chrome, Firefox), Node.js runtime environment, MySQL server.
- **Hardware:** A standard computer system with at least 4GB RAM and 2GHz processor.

4. Database Analyzing, Design, and Implementation

4.1 Database Analysis: The system's database includes key entities such as Users (patients and doctors), Appointments, and Schedules. Users are categorized by their roles, with doctors managing availability and patients booking appointments. Appointments connect users and schedules, storing details like date, time, and status.

4.2 Database Design: The database design connects **Users** to **Appointments** through user IDs, with **Doctors** managing **Schedules** that define their availability. **Appointments** link patients and doctors, recording details based on the schedules.

4.3 Database Implementation: MySQL is used to implement the database schema. Queries are written to handle CRUD (Create, Read, Update,Delete) operations.

5. Program's Structure Analyzing and GUI Constructing

5.1 Program Structure:

The system follows the Model-View-Controller (MVC) architecture. The frontend handles the user interface, the backend manages business logic, and the database stores data.

5.2 GUI Construction:

- **Homepage**: Overview of services.
- **Login/Sign-up Pages**: Forms for user authentication.
- **Doctor Dashboard**: Appointment schedule and profile management.
- **Patient Dashboard**: Search for doctors, view appointments.

6. Code Implementation and Database Connections

6.1 Code Implementation:

The code is modularized, with separate files for routing, database interaction, and frontend components. The backend communicates with the MySQL database using SQL queries.

6.2 Database Connections:

Database connections are handled using the MySQL Node.js library. Secure connections are established to prevent SQL injection attacks.

7. System Testing

7.1 Testing Methods:
The system underwent unit testing, integration testing, and user acceptance testing. Automated test cases were developed using Jest for JavaScript.

7.2 Testing Results:
All modules passed the test cases with minimal errors, which were promptly fixed. The system was tested for load handling and performed well under expected traffic.

8. Limitations

8.1 Limitations:

Limited to a specific geographical region.

May face latency issues with high user loads.

Lacks real-time video consultation.

9. Conclusion
The online doctor appointment system enhances healthcare access and management by streamlining the appointment process, reducing manual errors, and improving time efficiency for both patients and doctors. It provides patients with the convenience of booking, rescheduling, and cancelling appointments from anywhere, while offering doctors a structured and organized schedule. This system not only reduces waiting times but also ensures better resource utilization, leading to improved patient satisfaction and operational efficiency in healthcare services. By embracing digitization, the solution contributes to creating a more accessible, reliable, and patient-focused healthcare experience.

10. Future Scope
Future enhancements include integrating AI for doctor-patient matchmaking, enabling personalized recommendations based on patient needs. Expanding the system to support telemedicine features will facilitate virtual consultations, enhancing accessibility. Additionally, developing a native mobile application will improve usability and convenience for users.

11. Bibliography/References

- "MySQL Reference Manual," MySQL Documentation.
- "Node.js and Express.js Documentation," Node.js Foundation.
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