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Research Paper

ONLINE DOCTOR APPOINTMENT

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Abstract

Healthcare services often require patients to contact hospitals or clinics manually to check doctor availability and schedule consultations. This process can lead to long waiting times, missed appointments, scheduling conflicts, and difficulty in maintaining appointment records. The Online Doctor Appointment system is a web-based application designed to connect patients with doctors through a centralized platform for viewing doctor availability, selecting appointment slots, booking consultations, and managing appointment information.

The proposed system provides a simple mechanism for patients to register and create an account, search doctors by specialization, view available appointment slots, and book a suitable consultation. Doctors can manage their availability and appointment schedules, while administrators can manage users, doctor profiles, specializations, and appointment records.

The system is designed using HTML, CSS, and JavaScript for the client-side interface. A backend service and database can be integrated to support authentication, doctor profiles, appointment schedules, booking records, and administrative operations. The design focuses on usability, accessibility, accurate scheduling, and transparent appointment management.

Keywords: Online Doctor Appointment, Healthcare, Doctor Availability, Patient Registration, Appointment Scheduling, Web Application, Hospital Management.

I. Introduction

The Online Doctor Appointment System is a digital platform designed to simplify and improve the process of scheduling medical consultations. The system provides a convenient way for patients to search for doctors based on their specialization, view available appointment slots, and book consultations according to their requirements. It also helps healthcare providers manage their availability and appointments in a more organized manner.

Traditional methods of booking doctor appointments often involve visiting hospitals or clinics, making phone calls, or waiting for confirmation from reception staff. These methods can be time-consuming and may lead to difficulties in managing appointment schedules and maintaining accurate information. The proposed system addresses these challenges by providing a centralized platform that connects patients and doctors.

The system aims to make appointment scheduling faster, more convenient, and more organized. By providing information about doctors, specializations, availability, and appointment status, the platform helps patients make informed decisions and reduces the effort required to schedule a consultation. It also supports better management of appointments for healthcare providers, thereby improving the overall efficiency of the appointment process.

II. Literature Survey

Several studies have been conducted to improve the traditional doctor appointment process using information technology. Traditional healthcare appointment systems mainly depend on direct visits to hospitals, telephone calls, or manual registration at reception desks. These methods can be time-consuming for patients and healthcare staff and may result in long waiting times, scheduling conflicts, and difficulties in maintaining appointment records. The development of online appointment systems has provided an effective solution by allowing patients to access healthcare services through digital platforms.

Existing online doctor appointment systems provide various features that simplify the process of consulting healthcare professionals. These systems generally allow patients to register, search for doctors based on specialization, view doctor profiles, check available appointment slots, and book appointments online. Some platforms also provide appointment confirmation, cancellation, rescheduling, and appointment history. Such features reduce the need for manual communication and provide patients with greater flexibility when selecting suitable doctors and consultation times.

Mobile and web-based healthcare applications have further improved the accessibility of appointment services. Patients can use these platforms from different locations without physically visiting a hospital or clinic simply to schedule an appointment. From the healthcare provider's perspective, digital systems can help organize doctor schedules, manage patient appointments, and reduce administrative workload. However, some existing systems may have limitations such as complicated interfaces, limited availability information, lack of real-time appointment updates, or insufficient integration between patients and healthcare providers.

Based on the limitations identified in existing approaches, the proposed Online Doctor Appointment System focuses on providing a simple, reliable, and user-friendly platform for appointment scheduling. The system enables patients to search for doctors, view their specializations, check available consultation slots, and book appointments conveniently. It also helps doctors or administrators manage schedules and appointment information in an organized manner. Thus, the proposed system aims to reduce the difficulties associated with traditional appointment methods and improve the overall efficiency and convenience of healthcare appointment management.

III. System Analysis

System analysis is an important phase in the development of the Online Doctor Appointment System. It involves studying the existing appointment process and identifying the requirements of patients, doctors, and administrators. The main

purpose of the analysis is to understand the difficulties faced during traditional appointment scheduling. Patients require a convenient method to search for doctors based on their specialization and availability. The system should provide accurate information about doctors and their available consultation slots. It should allow patients to select a suitable date and time and book an appointment easily. Doctors should be able to manage their availability and view their scheduled appointments. Administrators should be able to manage patient, doctor, and appointment information. The analysis also considers system usability, reliability, security, and performance. By analyzing these requirements, the system can be designed to reduce manual work and improve appointment management. The overall analysis provides a foundation for developing an efficient, reliable, and user-friendly healthcare appointment platform.

Existing System

In the existing system, doctor appointments are commonly managed through traditional methods such as direct hospital visits, telephone calls, or manual registration. Patients may need to visit a hospital or clinic to check doctor availability and request an appointment. In some cases, patients need to contact the reception staff by phone to know the available consultation slots. These methods can consume considerable time for both patients and healthcare staff. Patients may not have immediate access to information about doctors, their specializations, and available appointment timings. Manual maintenance of appointment records can also result in errors, duplicate bookings, or scheduling conflicts. Cancellation and rescheduling of appointments may require additional communication with hospital staff. Updating doctor availability can also involve manual effort. The existing approach therefore provides limited flexibility and convenience to patients. It may also increase the administrative workload of healthcare organizations. These limitations indicate the need for a centralized and digital solution for managing doctor appointments.

Disadvantages of Existing System

- Appointment booking may require physical visits or phone calls.
- Patients may experience long waiting times.
- Doctor availability is not always easily accessible.
- Manual records can lead to errors and data duplication.
- Appointment scheduling conflicts may occur.
- Cancellation and rescheduling can be inconvenient.
- Maintaining records requires additional manual work.
- Patients have limited flexibility in selecting appointment slots.
- Communication between patients and healthcare staff may be time-consuming.
- Updating appointment information may not happen immediately.

Proposed System

The proposed Online Doctor Appointment System is a digital platform designed to simplify and improve the process of scheduling medical consultations. The system provides a common platform through which patients can search for doctors and book appointments according to their requirements. Patients can register and log in to the system and search for doctors based on their specialization. The system provides information about doctors and their available consultation slots. Patients can select a

suitable date and time and submit an appointment request online. The appointment details and status are maintained systematically within the system. Doctors can manage their availability and view the appointments scheduled with them. Administrators can manage patient details, doctor information, and appointment records. The system reduces the dependency on manual registration and telephone communication. It also helps minimize scheduling conflicts by maintaining organized appointment information. Overall, the proposed system provides a simple, reliable, and user-friendly solution for efficient healthcare appointment management.

Advantages of Proposed System

- Provides online appointment booking from anywhere.
- Allows easy searching of doctors by specialization.
- Provides information about available appointment slots.
- Reduces patient waiting time.
- Reduces manual registration and administrative work.
- Helps minimize appointment scheduling conflicts.
- Maintains appointment records in an organized manner.
- Makes appointment cancellation and rescheduling easier.
- Helps doctors manage their availability efficiently.
- Provides a centralized platform for patients and doctors.
- Improves convenience and accessibility.
- Provides faster and more efficient appointment management.

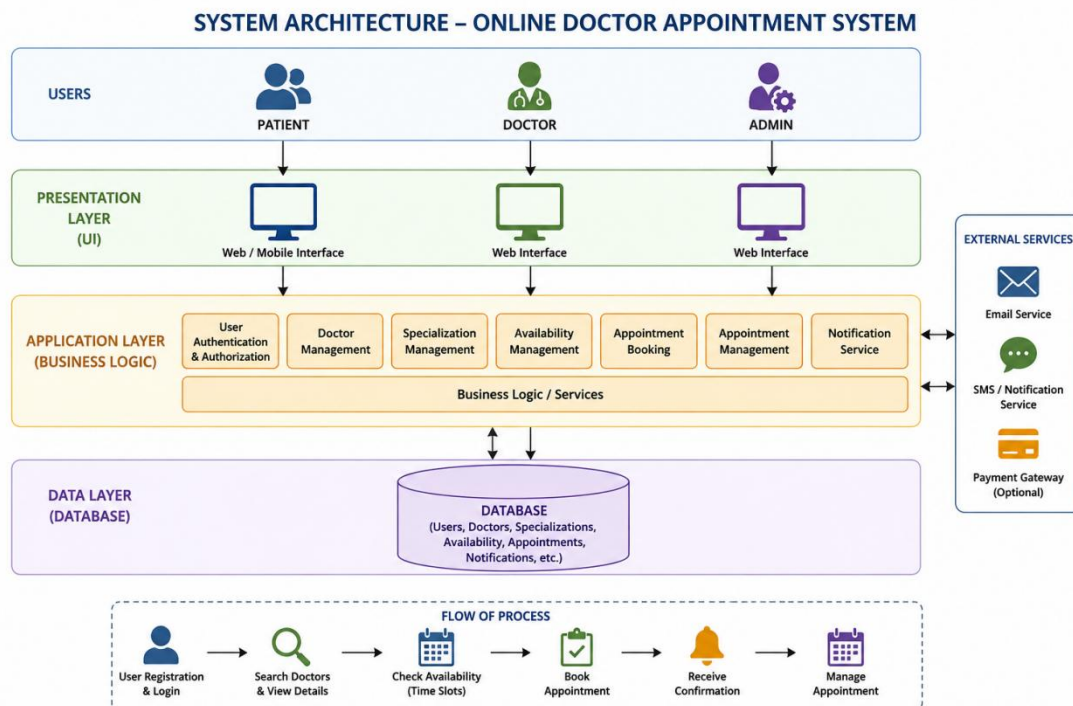
IV. Methodology

The methodology describes the systematic approach followed for developing the Online Doctor Appointment System. The development process begins with identifying and analyzing the requirements of patients, doctors, and administrators. Functional requirements such as user registration, login, doctor search, availability checking, and appointment booking are identified. Non-functional requirements such as security, usability, reliability, and performance are also considered during the analysis. Based on these requirements, the overall system architecture and database structure are designed. The application is then divided into different modules to make development and maintenance easier. The frontend is developed to provide an interactive and user-friendly interface. The backend is implemented to handle business logic, user requests, doctor information, and appointment operations. A database is used to store and retrieve patient, doctor, and appointment information. After implementation, individual modules are tested to identify and correct errors. Integration testing is then performed to ensure that all modules work together properly. Finally, the complete system is tested to verify its functionality, reliability, security, and usability.

System Architecture

The system architecture defines the overall structure and interaction between the different components of the Online Doctor Appointment System. The proposed system can follow a layered architecture consisting of the presentation layer, application or business layer, and database layer. The presentation layer provides the user interface through which patients, doctors, and administrators interact with the

system. Patients can register, log in, search for doctors, view availability, and book appointments through this layer. The application layer processes user requests and contains the main business logic of the system. It manages operations such as authentication, doctor search, appointment booking, availability management, and appointment status. The database layer stores important information such as user details, doctor profiles, specializations, availability, and appointment records. Communication between these layers ensures that information is processed and stored correctly. Authentication and authorization mechanisms help protect system information and control access to different functions. The layered architecture makes the system easier to maintain, test, and extend. Overall, the architecture provides a structured and efficient approach for developing the Online Doctor Appointment System.



V. Result and Output

RESULTS AND OUTPUT – ONLINE DOCTOR APPOINTMENT SYSTEM

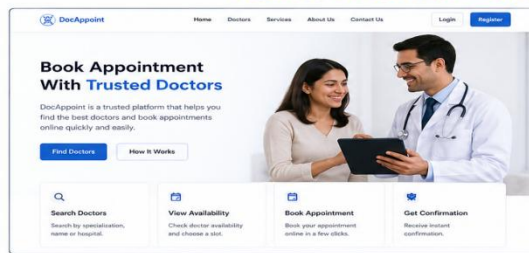


Figure 4.1: Home Page Interface

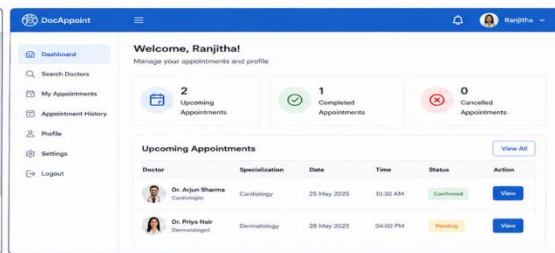


Figure 4.2: Patient Dashboard

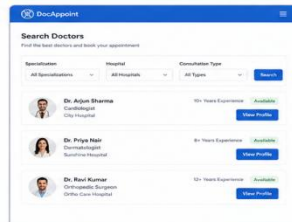


Figure 4.3: Doctor Search Interface

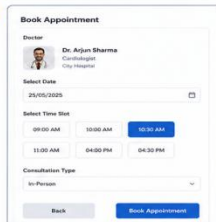


Figure 4.4: Appointment Booking Interface

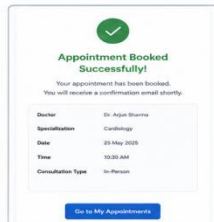


Figure 4.5: Appointment Confirmation

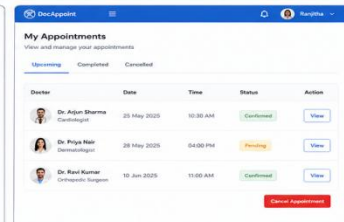


Figure 4.6: My Appointments Interface

VI. Conclusion

The Online Doctor Appointment System successfully provides a digital solution for managing doctor appointments in a simple and efficient manner. The system allows patients to register, log in, search for doctors, view doctor details, check available time slots, and book appointments online. It also provides features for viewing, confirming, and cancelling appointments. Doctors can manage their availability and appointments, while administrators can manage users, doctors, and schedules. The functional testing results show that the major features of the system work according to the expected requirements. The system reduces the dependency on manual appointment booking and helps minimize waiting time and scheduling difficulties. It also provides organized appointment records and improves communication between patients and healthcare providers. Overall, the proposed system demonstrates that a web-based platform can make the doctor appointment process more convenient, accessible, and organized. The system can be further enhanced in the future by adding online consultation, payment integration, notifications, electronic health records, and other advanced healthcare services.

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