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A WEB-BASED DOCTOR APPOINTMENT SYSTEM

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Abstract— A web-based doctor appointment system that has been developed using PHP programming language. The proposed system offers a comprehensive solution to the manual process of scheduling and managing appointments in the healthcare sector. The system has been designed to facilitate easy access to medical services, reduce waiting times and improve patient outcomes. The research paper provides an in-depth analysis of the system's architecture, design, and implementation. The methodology used in the development of the system is discussed, and its features are evaluated in detail. the results demonstrate its efficiency and reliability. The proposed system offers a range of features, including appointment scheduling, patient registration, medical history tracking, and prescription management. It is a cost-effective, user-friendly, and secure solution for healthcare providers and patients. The study highlights the need for computerized appointment systems in the healthcare sector, emphasizing the potential benefits of technology in improving the quality of care. The paper concludes with an evaluation of the proposed system's success and its potential for future developments.

IndexTerms **– appointment system, doctor application, php, html, css, data base;**

I. INTRODUCTION

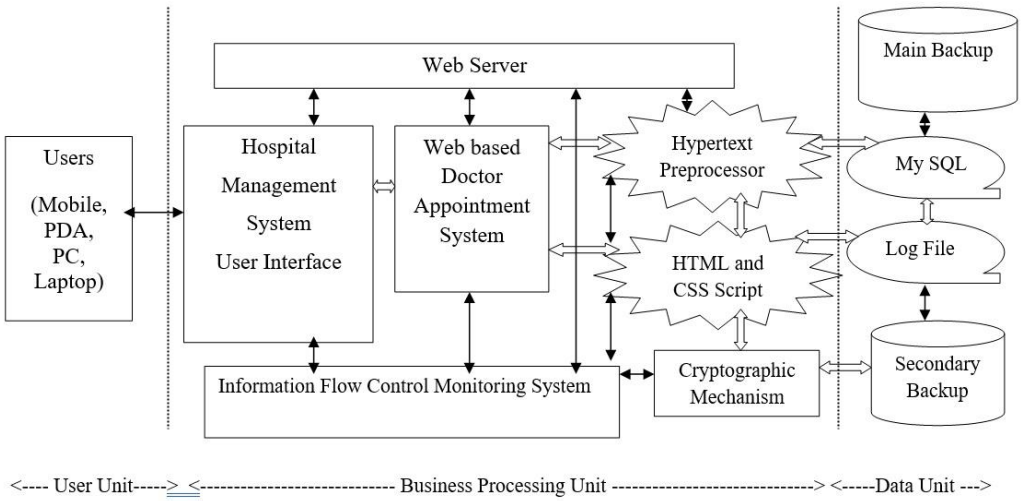
After covid-19, possibilities for implementing cloud computing technology in our daily lives and work lives made a greater change. The healthcare sector is an essential component of modern society. With the growth of the global population, the demand for healthcare services has increased exponentially, resulting in long waiting times, overcrowded clinics, and decreased patient satisfaction. The traditional approach to managing appointments in the healthcare sector has been cumbersome and inefficient. It is time-consuming, error-prone, and often results in frustration for both patients and healthcare providers. However, the recent advancements in technology have provided an opportunity for the healthcare sector to streamline the process of appointment scheduling and management, leading to more efficient and effective patient care.

In this paper, we present a web-based doctor appointment system that has been developed using the PHP programming language. The proposed system provides a comprehensive solution to the manual process of scheduling and managing appointments in the healthcare sector. It offers an efficient, user-friendly, and cost-effective solution to healthcare providers and patients. The system is designed to facilitate easy access to medical services, reduce waiting times, and improve patient outcomes.

The paper provides a detailed analysis of the system's architecture, design, and implementation. The methodology used in the development of the system is discussed, and its features are evaluated in detail. The system has been tested using various scenarios, and the results demonstrate its efficiency and reliability. The proposed system offers a range of features, including appointment scheduling, patient registration, medical history tracking, and prescription management. The study highlights the need for computerized appointment systems in the healthcare sector, emphasizing the potential benefits of technology in improving the quality of care. The proposed system offers a cost-effective, secure, and user-friendly solution for healthcare providers and patients. The paper concludes with an evaluation of the proposed system's success and its potential for future developments. Overall, the Yhi system offers a promising solution to the challenges faced by the healthcare sector, and it has the potential to transform the way healthcare services are delivered.

II. SURVEY AND DESIGN

The multi-layer architecture of web-based doctor appointment system in hospital management system as shown in following diagram.



The web-based doctor appointment system supports complete health care system in hospital management system. It is multilayered architecture which has user interface, transaction layer or business processing unit such as doctor – patient scheduling system and storage unit as data unit.

The user interface (UI) is a critical component of any web-based system. It is the primary means by which users interact with the system, and it determines the user experience (UX) of the system. Therefore, a well-designed UI is essential for the success of any web-based system. In this paper, we present the user design for a doctor appointment system developed using PHP programming language. The UI of the this system has been designed using HTML and CSS. The design is clean, intuitive, and user-friendly. The UI consists of a series of web pages that allow users to interact with the system. The main pages of the UI are the login page, registration page, appointment scheduling page, medical history page, and prescription management page.

The login page is the first page of the UI. It allows registered users to log in to the system. The registration page allows new users to create an account in the system. It requires users to provide their personal information, including their name, address, contact details, and medical history. Overall, the user design of doctor appointment system plays a vital role in the success of the system and provides a model for developing other web-based systems.

a). Software development tools

1. Apache.
2. PHP.
3. Database: MySQL.
4. UI: HTML and CSS.

b). Apache

Apache is considered one of the best web servers [2] available for a variety of reasons:

1. Open source: Apache is an open-source web server, [19] which means it is free to use and can be modified and distributed by anyone. This makes it an affordable and flexible choice for web developers.
2. Cross-platform compatibility: Apache is compatible with most operating systems, including Windows, Linux, and macOS, making it an accessible and versatile option for web development.
3. High performance: Apache is known for its high performance and stability, [20] thanks to its scalable and robust architecture. It can handle large amounts of traffic and is optimized for multiple simultaneous connections, making it ideal for high-traffic websites.
4. Secure: Apache is built with security in mind and includes features such as SSL/TLS encryption, which helps protect sensitive data transmitted over the internet.
5. Modular architecture: Apache is designed with a modular architecture, which means it can be extended with additional modules to add functionality and features as needed.

Overall, Apache is a reliable, efficient, and secure web server that has stood the test of time and continues to be a popular choice for web development.

c). PHP (Hypertext Preprocessor)

It is a popular server-side programming language used for web development. There are several reasons why PHP is a good choice for website development at first its open source: [2] Like Apache, PHP is an open-source programming language, which means it is free to use and can be modified and distributed by anyone. This makes it an affordable and flexible choice for web developers.

PHP is a beginner-friendly language with a relatively simple syntax, making it easy to learn and use for those new to web development. a large and active community of developers who contribute to the development of the language and provide support through forums, online resources, and documentation.

[16] Cross-platform compatibility of PHP can run on multiple operating systems, including Windows, Linux, and mac OS, making it an accessible and versatile option for web development and can be easily integrated with other web technologies, such as HTML, CSS, and JavaScript.

[17] as well as popular content management systems like WordPress and Drupal. In database support, PHP has built-in support for a variety of databases, including MySQL, PostgreSQL, and SQLite, making it easy to store and retrieve data from databases.

d). MySQL

MySQL is a popular open-source relational database management system (RDBMS) that is commonly used with PHP web systems.[4] MySQL is known for its high-performance capabilities and is optimized to handle large amounts of data efficiently. This makes it an ideal choice for high-traffic websites and applications.[4] it is easy to set up and use, with a simple syntax for querying and manipulating data. This makes it an ideal choice for beginners and advanced users alike.it can handle a large number of concurrent connections and can be used to build complex applications.MySQL can be easily integrated with PHP and other web technologies, allowing developers to build dynamic and interactive websites and applications.it is reliable and powerful database management system that is well-suited for PHP web systems due to its high performance, ease of use, scalability, and cross-platform compatibility.

e). HTML and CSS

HTML and CSS are two essential programming languages used for creating websites. [13] HTML is the markup language that is used to structure content on the web pages, while CSS is used to style and layout the content. The use of HTML and CSS offers several benefits for website development:

1. Consistent Design: HTML and CSS provide a consistent design across all pages on a website. By using CSS, the design of the website can be changed easily, providing a uniform look throughout the website.
2. Improved User Experience: By using HTML and CSS, web designers can create web pages that are easy to navigate and read. This improves the user experience, leading to increased engagement and better customer satisfaction.
3. Faster Loading Speeds: HTML and CSS allow for optimized website performance, which in turn reduces page loading time. This leads to better website traffic and search engine rankings.
4. Better Accessibility: HTML and CSS support accessibility [14] features like alt tags, ARIA attributes, and other tools to make the website more accessible to users with disabilities.
5. Cross-Browser Compatibility: HTML and CSS provide cross-browser compatibility. This means that web pages look and function the same across different browsers like Chrome, Firefox, and Safari.
6. Cost-Effective: The use of HTML and CSS can help reduce development costs by creating a standardized framework that can be used across multiple pages.

III. DEPLOYMENT

The paper is deployed in local host using XAMPP software. The Apache and MySQL service in xampp is started and the main folder is placed inside “htdocs” of xampp folder in the c: drive of the local computer and using address “http://localhost/phpmyadmin/” and the database named edoc is created and imported from the main folder placed inside the xampp folder. The index page of the system can be seen as is Figure 1 below.

Figure 1. Index page.

The account creation for the admin and doctor account is been done by the admin through the native deployed system. The admin, doctor and patient have the same login page, the details they provide will take the user to their appropriate page. Check the view of login page in Figure 2.

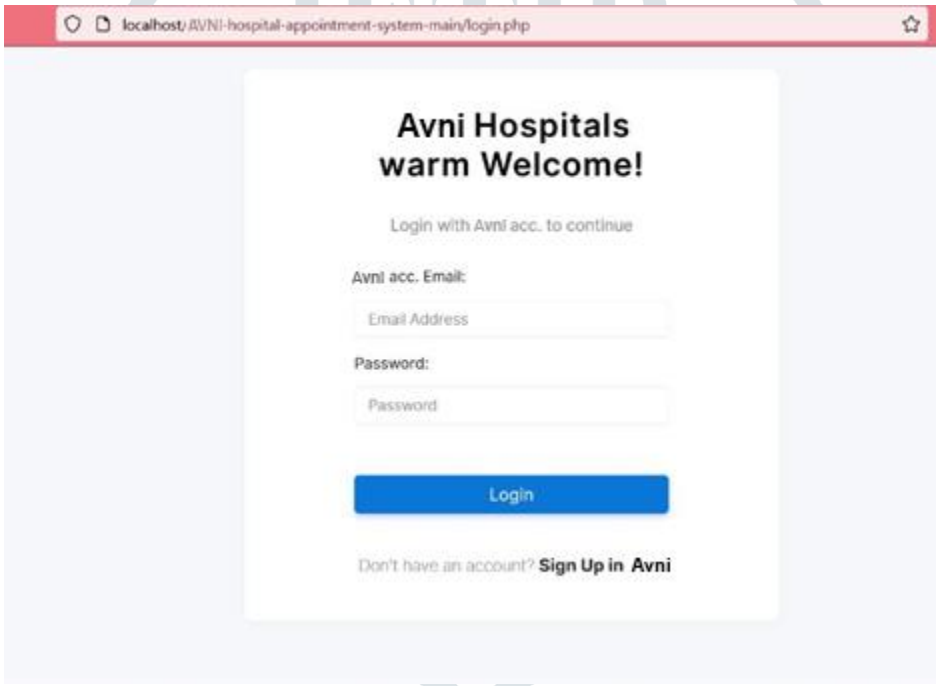


Figure 2. Login page for Admin, Patient and Doctor.

The signup page (Figure. 3) is required for patients that has fields such as name, email, number, address, date of birth of the patent and password field.

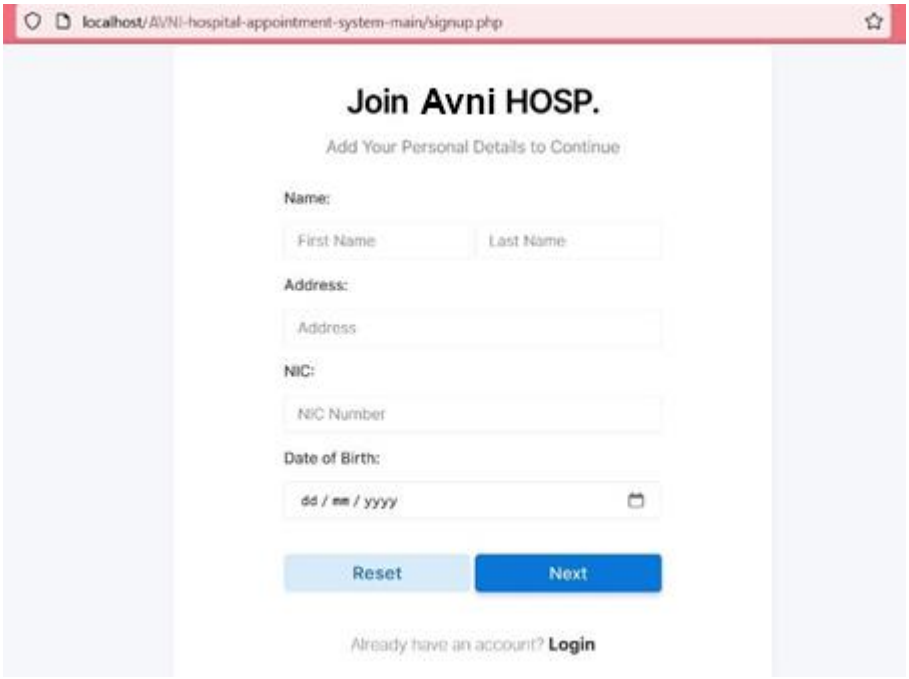


Figure 3. Signup form -1st stage.

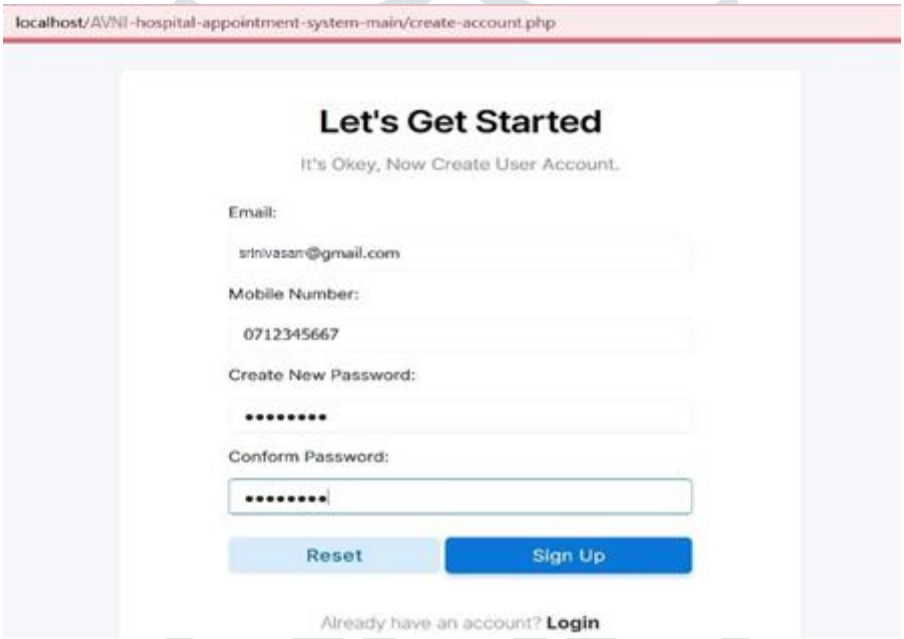


Figure 3. Signup form.

The admin can perform operations such as add doctors, edit doctors, delete doctors, Schedule new doctor's sessions (Figure. 5), remove sessions, View patient details, View booking of patients. For view of admin dashboard check Figure 4 below.

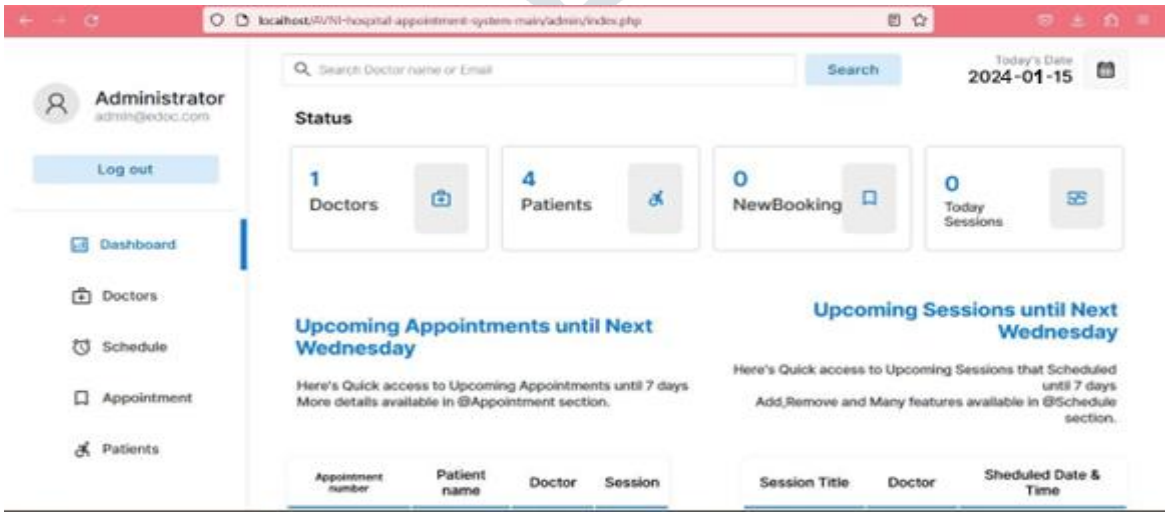


Figure 4. Admin dashboard.

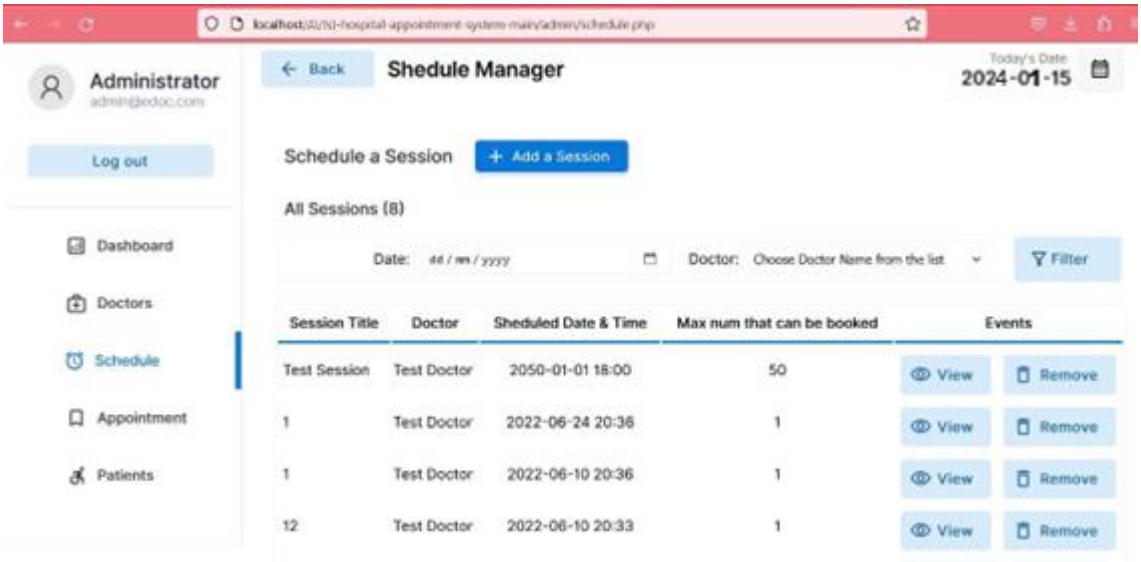


Figure 5. Admin – doctor schedule manager.

With the doctors account, the doctor can view their appointment, view their scheduled sessions, view details of patients, delete account, edit account settings. Doctor dashboard in Figure 6.

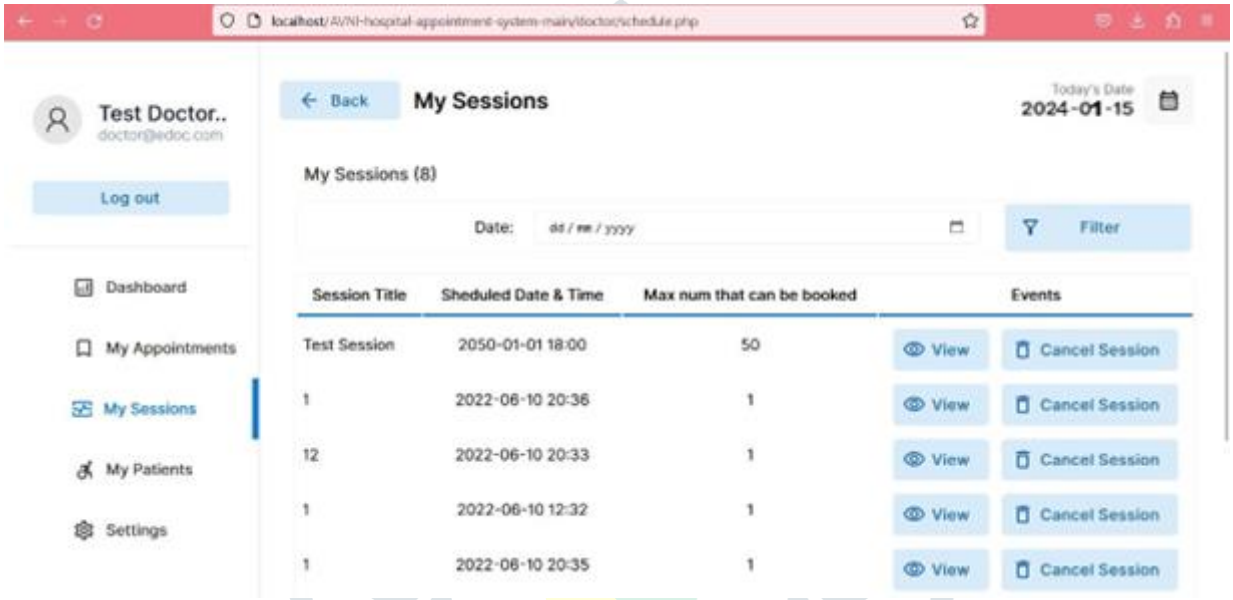


Figure 6. Doctor page dashboard.

The patients can view and make appointment online (Figure. 7), create accounts themselves, view their old booking (Figure. 8), delete account, edit account settings.

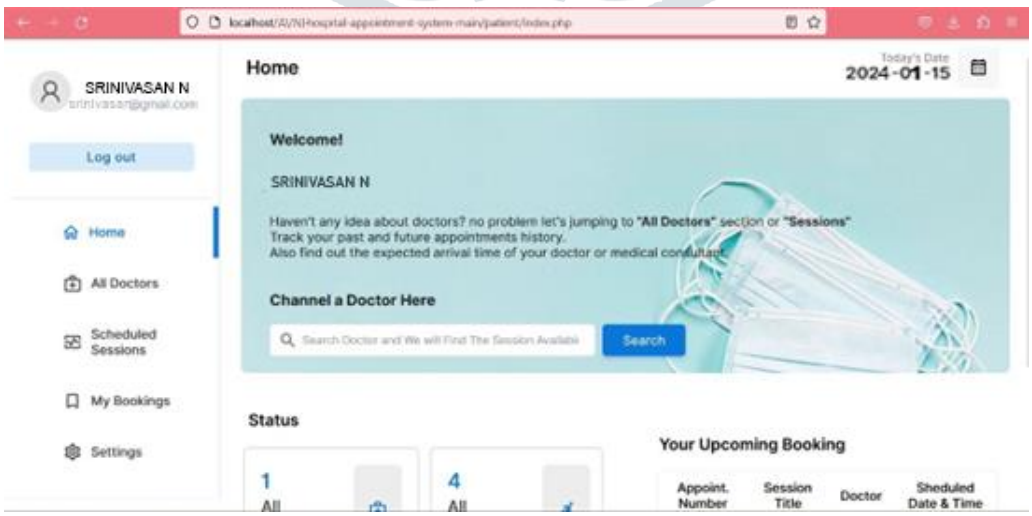


Figure 7. Patient dashboard.

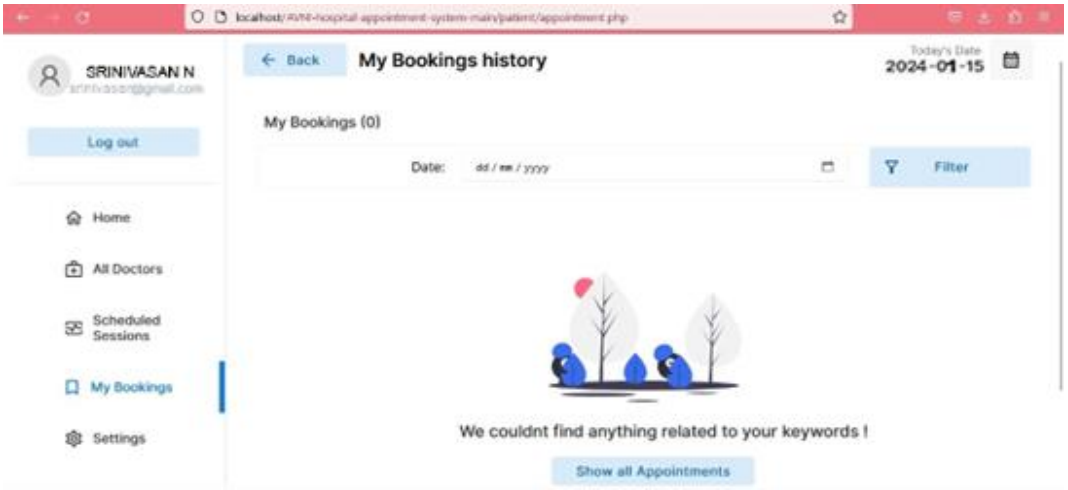


Figure 8. Patient's bookings.

IV. CONCLUSION AND FUTURE WORK

In this paper, we have presented a PHP-based doctor appointment system designed to improve the healthcare industry's efficiency and accessibility. The system was developed using Apache web server and MySQL database, which offer scalability, security, and high performance. We have provided a detailed description of the system's architecture, features, and functionalities, including the appointment scheduling process, patient registration, and medical history management. Additionally, we have discussed the advantages of using PHP, Apache, and MySQL in web development and how they are suitable for building an efficient and reliable system. The web-based doctor appointment system offers several benefits, including reduced waiting times, improved communication between patients and doctors, and an optimized workflow for medical staff. The system's user-friendly interface and ease of use make it accessible to all users, including those with limited technical knowledge. Our research has shown that a PHP-based doctor appointment system can significantly improve the healthcare industry's efficiency and accessibility.Despite the system's strengths, there are some limitations that need to be addressed in future work. For example, the system's security could be further enhanced, and more features could be added to make the system more versatile and adaptable to different healthcare environments. In conclusion, the web-based doctor appointment system is a reliable and efficient web-based solution for the healthcare industry that has the potential to improve patient care and streamline medical operations. The use of PHP, Apache, and MySQL in the system's development provides a solid foundation for a scalable, secure, and high-performance system. Further research and development can extend the system's capabilities and improve its overall efficiency and usability.

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