Scheduling Appointment for Patients' Using PHP

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ABSTRACT: *The conventional approach to seeing a specialist would involve going directly to the clinic, making an appointment, and waiting in line to see a specialist. This would require more time and effort from the patient.This web-based application would provide a way to schedule a doctor's appointment online via a website.There will be 2 panels which is user and doctor/admin where the user can book their appointments and the doctor/admin can manage their availability timings,updating the booked appointments and view their scheduled patients.It is likely that doing this would help doctors and patients better manage their time.This paper discusses the creation of a system that increases physician and patient satisfaction. This article describes the architecture of a patient appointment scheduler system that uses MYSQL for the backend, Ajax framework, PHP, and HTML, CSS, and javascript for the frontend.*

Keywords: *Patient, Time, system.*

1. INTRODUCTION

Health is a most important aspect in peoples life which requires health cares to keep up with their health good.If something occurs with their health they need to consult a specialist to get it clear,but to consult a doctor they need to make an appointment which requires time. Traditionally if someone needs to consult a specialist they need to go directly by the healthcare and have to wait in the queue(if present) and the book the appointment and have to wait for their turn to consult.This requirespeople time and energywhich is precious nowadays. Considering thegrowth of the technology and the availability of resources we can possibly give a solution for the patients to consult a specialist without the waiting time. In this article we are covering how its going to be developed and implemented. There will be 2 panels in this web application which will be 1) user side(which is patient) 2) doctor/Admin. In user side the user can book the appointment by entering the details that has been required and they can book on their desired time based on the availability of the specialist. On the other hand the doctor/admin can view their update their status like accepted or canceled regarding the booking and can view their appointments in the calender view with listed appointments on the particular date which will be very beneficial to remember and manage their

schedules. And they can also update their availability timings so that the user can book accordingly. This basic modules can be highly enough for a healthcare to improve their service to the patients. The doctor can login the site using id and password. So this would improve the efficiency of the healthcare and the user can be able to consult a doctor based on their desired schedule without being present at the healthcare and waiting to consult a doctor.

2. LITERATURE REVIEW

2.1 Waiting Time

Waiting times for elective care have been considered a serious issue in many healthcare systems since it acts as a barrier to efficient patient flows. The findings of the study also shows that two factors have a effect on the waiting time, which is treatment process and the admission process(kumari et al.2018).

Waiting time is a file used to survey patient fulfillment, administrative viability and value in giving medical services to medical care purchasers. It is likewise viewed as a quantifiable boundary for really looking at the proficiency of the clinic division and its experts for further developed help conveyance(osundina et al.2017).

2.2 Patients' appointment system

This finding suggests that the hospital to construct the appointment system, take attention of patient flow and set scheduling of the capacity to increase the effective and efficiency outpatient department performance(mardiah etal.2013).

The most of the client and service providers were supported the idea of introducing the new appointment system instead of the existing walk in system. They saw the benefits that the new appointment system has such as time saving,less crowds in the healthcareetc…(Al-Haqwi et al.2007).

2.3 Managing patients' appointment system

The advantages of implementing the system would be highly beneficial for the people who involved in the scheduling process, as the doctors/admins can manage their tasks efficient and more precise, on the other hand the users/patients have the ability to schedule their reservations more easily and fast(akinode et al.2017).

Managing patient appointment system is a web based application which will be helpful to maintain and reduce the time to consult a doctor in healthcare(dexter 1999). Most of the healthcare lacks in implementing the appointment system thus leads to larger waiting time.

2.4 Online booking system

The online booking system is a simple platform to use. By following its easy and straightforward design, anybody who can be able to use a web browser can quickly understands the bookings, update booking details, cancel bookings, change personal profiles, examine booking history.(Moindjie et al.2022)

The consistent mix of heterogeneous data networks into the Web and the creation of the Internet as a dispersed interactive media application stage prompted the improvement of agreeable Web/web booking systems.(goecke 2020).

2.5 Existing appointment schemes

Traditionally if someone needs to consult a doctor,they directly go by the

hospital and wait in the queue to book the appointment and then have to wait until their turn to consult.

panaviwat et al.2014 proposed appointment system which can efficiently manage patients matching with nurses and doctors' service. The findings show that 30-minute appointment intervals reduce approximately 44% of average waiting time while 60-minute appointment intervals reduce approximately 37%. Priority, serving the appointed patients firstly, focuses on minimizing the average waiting time for the patient who booked an appointment comparing to FCFS priority in where the types of patients are not affected.

The assessment measurements were assessed when the execution of the of the online appointment scheduling system.Where the patients information were completed at the pre- and post- implementation phases and shown significant positive effect on the improvement of the three metrics means, including Patient waiting time, No-show rateand Physician punctuality(habibi et al.2019).

3. SYSTEM ARCHITECTURE

The architecture is organized to permit clients to utilize versatile PC framework, work station framework, as internet browser to get to the booking framework. In this three tier architecture is used which includes user interface,web server and database.

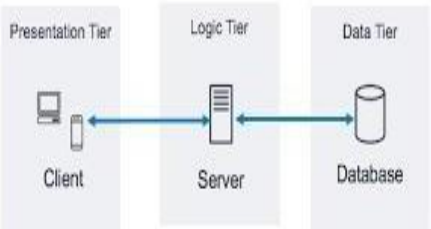

Figure 1. The architecture

3.1 Use case diagram

The use case diagram depicts the different ways that a user might interact with a system

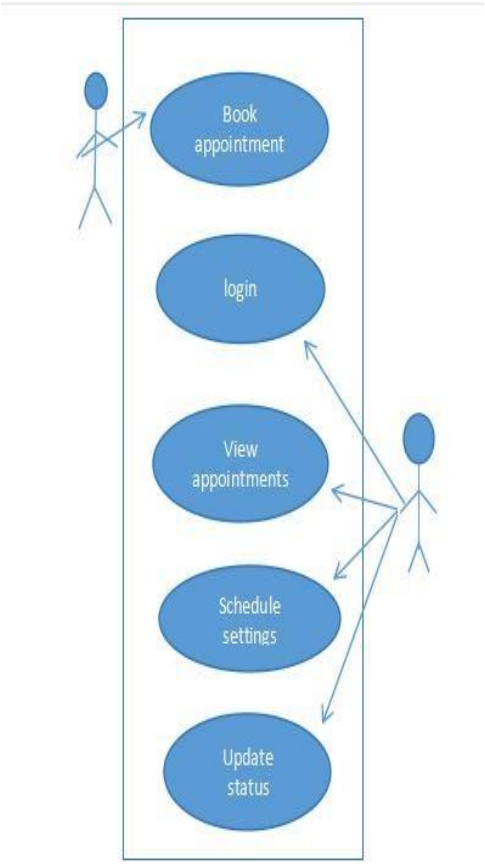

Figure 2. use case diagram for thissystem.

3.2 Flowchart

The system flowchart for the patient appointment scheduler illustrates the sequential orders and interaction

between the web application. Beginning with the patient appointment booking then waits for the doctors status if accepted or canceled and then visiting the healthcare.

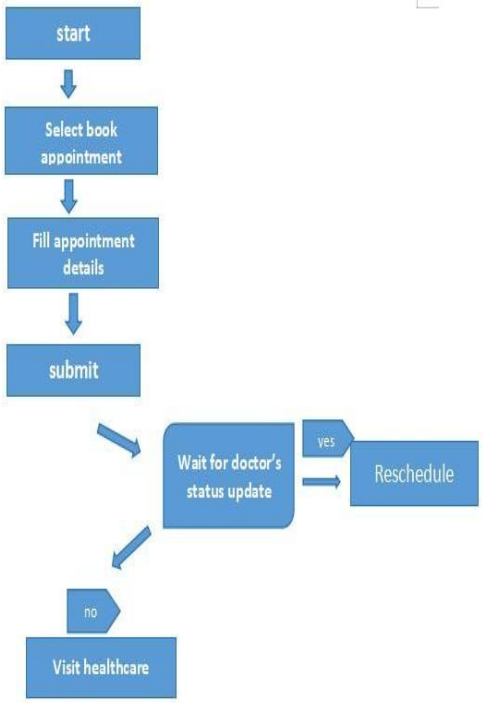

Figure 3. Flow chart for this system

3.3 Database design

The database design for the patient appointment scheduler involves structuring the database to store the data efficiently and managing them in a secure way. It includes patient table to store the patient list, appointment table to store the appointments that has been made and the schedule settings table to store the time and others. The design ensures the data integrity,provides seamless queries and support the system's overall functionality.

4. PROPOSED SYSTEM

The proposed system includes two panels namely user panel and the doctor/admin panel. The user has to open the website to use it. The user has to open the website and has to select the schedule appointment option to schedule their appointment. Then the user has to fill all the details required to book like name,email,contact,appointment date etc... On the other hand the doctor/admin side has several options includes 1)login with their id password 2)Dashboard which displays the calender model that has a appointment list on the date that has been booked. 3)Schedule setting where the doctor can update their weekly available days and also the availability time on that day as forenoon and afternoon. 4)Appointment list in which the doctor can view the appointments that has been made and make action whether the appointment has been confirmed or canceled.After updating the status the user will get an email about their status and the timings to be present at the healthcare.

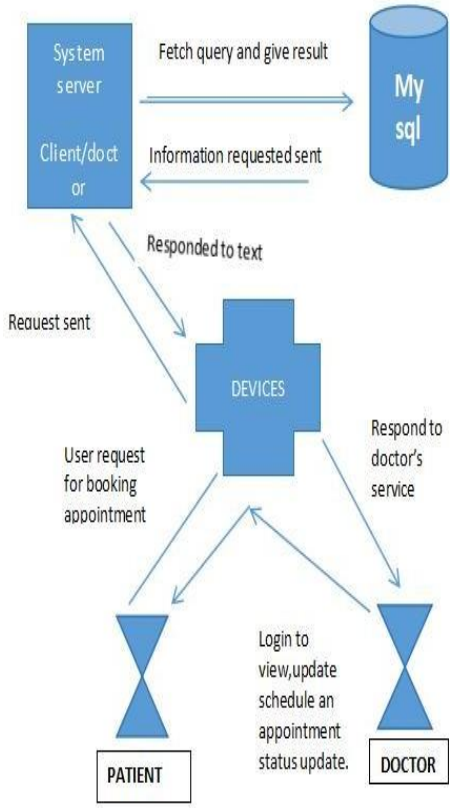

Figure 4. Proposed system

This system provides a smart and easy way to book the appointment without directly visiting the hospital. This web

application overcomes the issue of waiting times over the healthcare and can manage the bookings on their desired schedule. It will be user friendly, also the doctors can easily access and work in the website because it doesn't have any complicated interface. This web application has been made using the html,css,js to design interface and uses mysql to store data in database and php is used to interact with the database and to make the web application fully functional.

5. RESULTS AND DISCUSSION

The system that has been developed will be understandable with the help of the figures that has been given below.

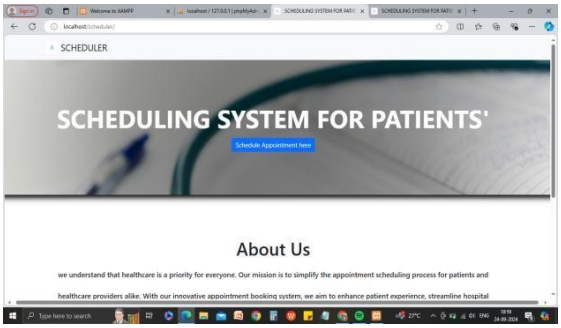

Figure 5. user portal

The figure 5 shows the user portal where the users can book the appointment to consult the doctor with the option of schedule appointment here button. After pressing that he/she has to fill in all the details asked to book and then finally submit the appointment.

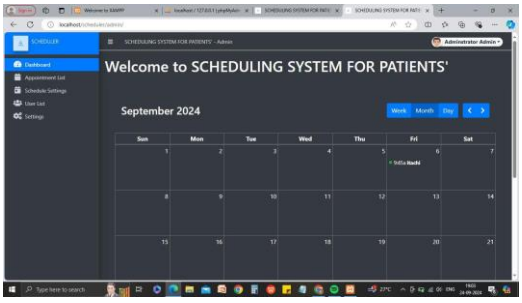

Figure 6. Dashboard on doctor portal

The figure 6 shows the dashboard where the doctors can view their appointments in the model of the calender which has the appointments listed on the dates.This will be on the doctor side once they login with their id and password. This will be highly beneficial for the doctors to not miss any appointments.

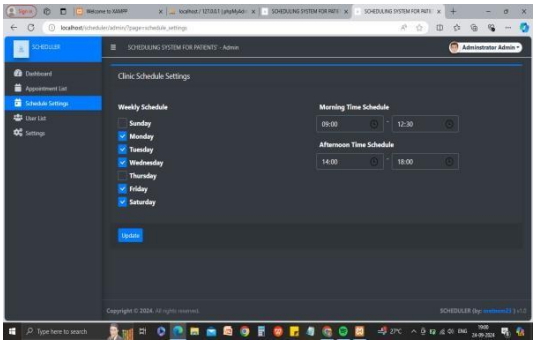

Figure 7. Schedule settings

The figure 7 shows the schedule settings where the doctor can update their schedule settings i.e. the timings and day when the doctor is available to consult the patients'. With this they can update the schedule settings so that that will show effect on user portal so that they cannot book on the wrong date wherethe doctor is not availabe.

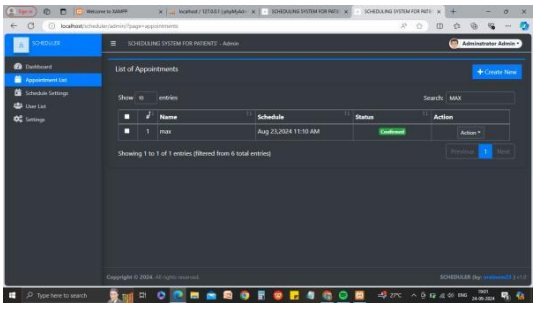

Figure 8. Appointments

Figure 8 shows the appointment page where the doctors can be able to manage their appointments or to accept or cancel the appointments that has been made by the patients'.

So,by this we can manage and book appointments at ease. This would be a

lot helpful for the healthcares to improve their efficiency.

6. CONCLUSION

By the development of this web based patient appointment scheduling system the patients can schedule their appointments with the doctor at ease. This system is designed to overcome some challenges faced by the patients and the doctors in healthcare. This overcomes the main disadvantage of traditional appointment system which is waiting time, the patients doesn't have to wait in the hospital they can directly go by the time they have scheduled. It provides a simple and easily accessible platform to operate and access for both the users and the doctors because it doesn't need any computer knowledgeto operate the platform.
The patients can schedule on their desired time based on the availability of doctors which the doctors can update on their side by login their id's makes it less complicated by not collapsing the time without any notice. The doctors can also view their schedules on the dashboard which has a calender model that displays the appointments that has been made on the dates on the calender which will be highly beneficial for the doctors to not to forget their appointments and can manage their personal schedules according to that. By this we can make the healthcare more efficient in making their service moresatiable.
This article can be useful for those who can make more advanced options for the healthcare by implementing the upcoming technologies in the future.

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