ONLINE MEDICARE SYSTEM USING DJANGO AND MAILTRAP API

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Abstract - HealthStack is a clever online Medicare system that offers users and hospitals a web interface so that patients can consult with or schedule appointments with doctors while at home. The maintenance and preservation of these files was a very laborious task because historically, the majority of management in hospitals was done manually on paper. It was more prone to mistakes, and it was challenging to retrieve specific data. Anyone may quickly obtain the necessary information, such as hospital opening hours, doctor availabilities, appointment scheduling, and room availability, with the aid of this software. With a special username and password, patients, doctors, and hospital administrators from all over the world can create accounts in this software and communicate with one another. Some of the key features include real-time doctor-patient communication online, an online medical supply store, test results, and prescriptions. People will readily take advantage of this due to the growing popularity of internet platforms and the desire to avoid wasting time and travel distance. The medical professionals are highly skilled and specialised. Additionally, the website contains a store where patients can buy their medications.

***Key Words*:** web interface, appointments, software, prescription, medical store, time.

1.INTRODUCTION

A number of hospitals are supported via the internet platform known as HealthStack. It provides patients in need of emergency treatment with immediate medical assistance. its capacity to share, track, and monitor a patient's medical records between all facilities. Online appointment scheduling and hospital and physician information are also available to patients. Paying for laboratory testing online, chatting with designated doctors, and getting prescriptions to buy medications online are all options. Before using the application, the patient must register. After logging in, the patient can choose a hospital, read the facility's information and the doctors who are currently on staff there. They can also determine which hospitals offer the best care for a given sickness type. The patient can choose a physician from the list of physicians and view the physician's profile. The patient might ask for an appointment on the day and time of his or her choice. The patient will receive an email confirming the appointment has been successfully added, and the chosen day and time will be reserved.

2. RELATED WORKS

[1] AUTHOR: C. Cola and H. Valean, "E-health appointment solution, a web-based approach," 2015 E-Health and Bioengineering Conference (EHB), Iasi, Romania, 2015, pp. 1-4, Doi: 10.1109/EHB.2015.7391431.

We'll talk about a web-based video appointment solution in this essay. Utilising web technologies to manage the medical appointment is the suggested option. If the patient and doctor agree, a video consultation may be substituted for a typical office visit. The appointments are scheduled according to the daily time slots that are available. The doctor or a person with authority over them sets these times. No additional software is needed; video appointments can be made directly in a web browser.

[2] AUTHOR: S. S. Devi, J. S. Deepica, K. Dharshini and G. Dhivyashree, "User Interactive Hospital Management System by using Web application," 2021 Second International Conference on Electronics and Sustainable Communication Systems (ICESC), Coimbatore, India, 2021, pp. 1578-1585, doi: 10.1109/ICESC51422.2021.9532887.

Particularly during the pandemic time, technology utilisation in medicine and healthcare has increased recently. individuals prefer to do all tasks through mobile applications and websites since there is a significant reduction in the number of individuals moving about in public. The most common and practical way for people to get in touch with hospitals and other healthcare organisations is through their websites. Large database management systems are needed across the board in the healthcare industry to handle the massive amounts of data pertaining to patients, physicians, consultations, and treatments. In order to address this issue, hospitals built a database management system to maintain all the data effectively. This system can be accessible by patients, physicians, and administrators via a single website. This solution makes it easier for patients to check their medical profiles and schedule appointments online. Additionally, it gives clinicians the ability to view their visits and write prescriptions for

patients online while taking into account their medical histories. The laboratory division may post reports online, offering contactless medical reports, and the technology enables administrators to manage all the patient data. It also sends email reminders for forthcoming visits. The created website is a three-user dynamic system that successfully organises data and offers a reliable database system.

3. EXISTING SYSTEM

Following some investigation into the current hospital management systems, we discovered Anyone who is ill and wants to see a doctor for a checkup must go to the hospital and wait until the doctor is available, according to current healthcare practises. In addition to waiting in queue for an appointment, the patient. The patient is not able to learn about the cancellation of the appointment unless and until he or she attends the hospital if the doctor must cancel due to an emergency. Paper notes or direct conversation are used to pass along the information from one healthcare expert to another. Even in a single facility, it is exceedingly challenging to examine the utilisation rate of hospital resources, the bed occupancy rate, the administration data, and the laboratory data. The difficulties of integrating multi-specialty Medicare Centres can then be anticipated. For instance, in the United States, prescriptions are traditionally written on paper and given to patients instead of being communicated electronically between doctors and chemists. The customer delivers the prescription to the drugstore, lines up to provide it to a pharmacist, and then waits for the pharmacist to fill it. It is particularly difficult to keep and transmit information on room reservations, doctor appointment schedules, operation schedules, and medicine dosages throughout the various Medicare centres.

4. PROPOSED SYSTEM

One's health plays a crucial role in their existence. The weather is becoming worse every day, and so are people's eating habits. It has such a negative impact on our health. Nevertheless, individuals are more concerned with their health now. Therefore, we need a better care system for improved health. Time is a crucial factor when it comes to treatment. We suffer more the more we ignore it. To improve the health of the target people, the healthcare system provides healthcare services. Infectious and non-communicable diseases are on the rise at the same time, placing a double strain on healthcare. Anyone who feels unwell and has to see a doctor for a checkup must look for the best medical professional for their condition. Manually locating the best medical professional for a certain ailment is difficult. The HealthStack system assists in locating local specialists for a certain disease as well as information and advice on how to treat the condition. Finding doctors across numerous multispecialty hospitals is made simple by this healthcare management system, enabling patients to recover from illness more quickly. There are three key modules in this HealthStack system: admin, doctors, and users. Administrators have the ability to manage doctors by adding new ones, hiring them, changing their current information, and eliminating any that are no longer in practise.

5.1 MODULES DESCRIPTIONS

1. Admin
2. User/ Patient
3. Doctor
4. Labworker
5. Pharmacist

5.1.1 ADMIN MODULE

Using a valid email address and password, the admin can register for an administrator account in this module. In addition to having the power to change hospital information and add hospitals, the admin may also add chemists and lab technicians. The administrator has the power to hire doctors, has complete control over the web application, and can keep an eye on website traffic.

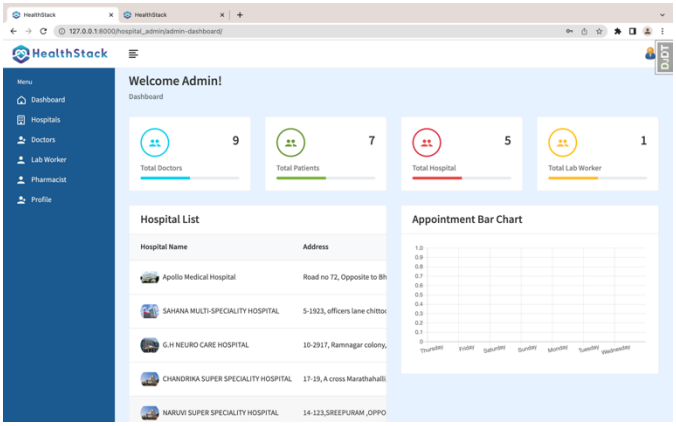

Figure 1: Admin Dashboard

5.1.2 USER/ PATIENT MODULE

1. Login: User can login his account using id and password.
2. Ask question: User can ask question related to their diseases and doctors for cure.
3. Search Doctor: User/Patient can search for the doctors in specialized fields and make appointment with them.
4. Medical shop: User can buy the medicines prescribed by the doctor through this portal and get door delivered.

5. Multiple Hospitals: The User can check and enquire about multiple multispecialty hospitals around the globe.
6. User Dashboard: This contains information about Appointments, Prescriptions, Medical records, Billing.
7. Doctor Chat: The user can chat with his doctor about his/her health conditions.
8. Profile settings: The user can update/modify this profile details

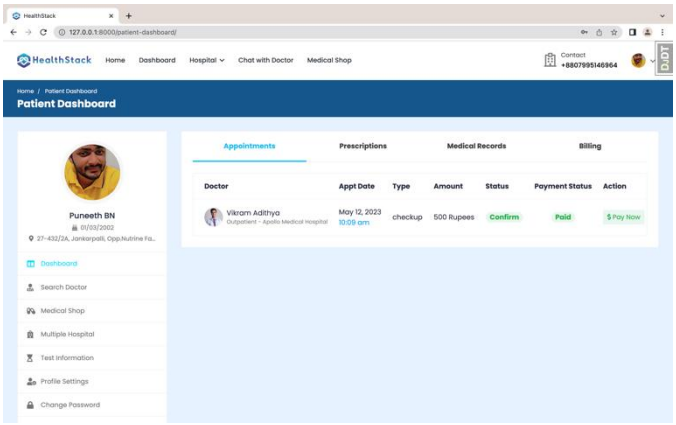

Figure 2: Patient Dashboard

5.1.3 DOCTOR MODULE

1. Chat with patients: Doctor's can chat with their patients through chat portal.
2. Login: Doctor can login his account using id and password.
3. Hospitals: Check for multiple hospitals and join them.
4. My patients: Check for the list of patients
5. Appointments: Check for the upcoming or pending appointments.
6. Test Information: Viewing the test reports of the patients
7. Add Prescription: Give online prescriptions to the patients.
8. Dashboard: Managing the patients
9. Profile settings: updating the doctor's profile

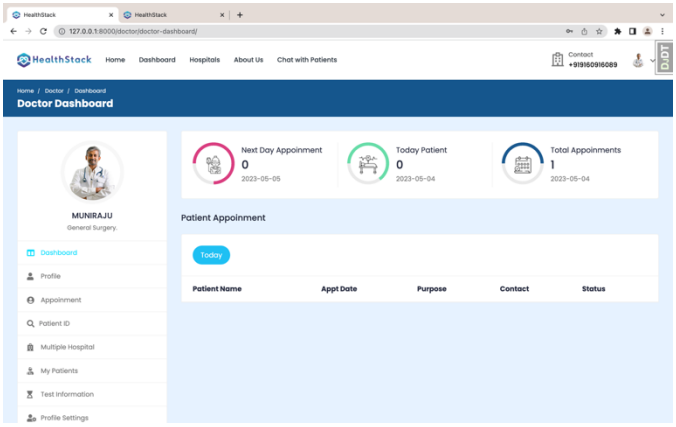

Figure 3: Doctor Dashboard

5.1.4 LABWORKER DASHBOARD

1. Login: Lab worker can login his account using id and password.
2. Patient List: Check the list of patients
3. Test List: Contains the list of tests to be performed

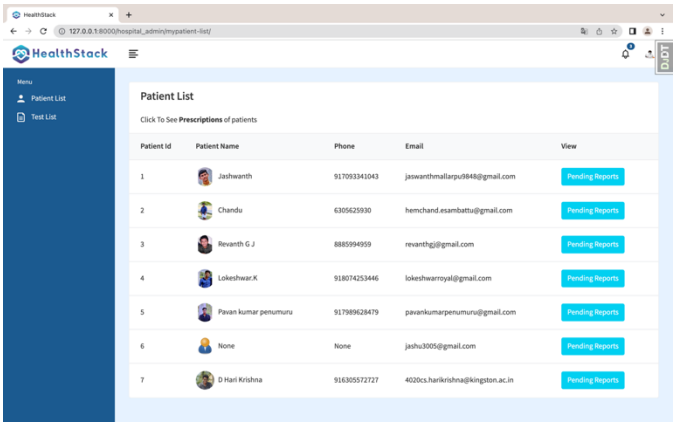

Figure 4: Labworker Dashboard

5.1.5 PHARMACIST DASHBOARD

1. Login page: Pharmacist can login his account using id and password.
2. View medicine: Check all the available medicines
3. Add medicine: Adds the new medicines to the store
4. Dashboard: Used to manage the medicines and orders

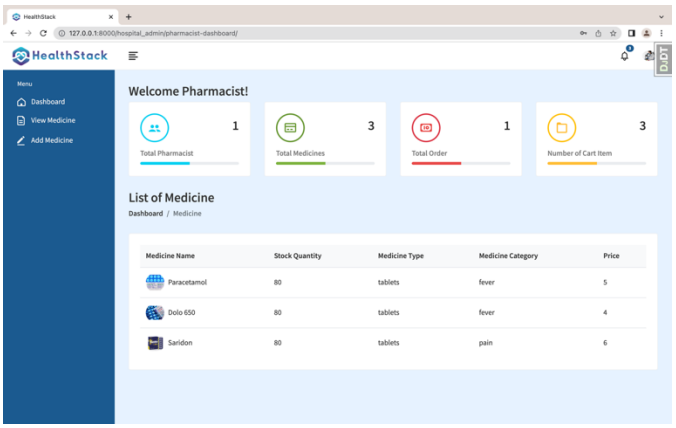

Figure 5: Pharmacist Dashboard

6. ARCHITECTURAL AND DATAFLOW DIAGRAM

6.1 SYSTEM ARCHITECTURE

Five major modules and a number of minor submodules make up this software. Django, a Python web development framework, is used to create this programme. The mailtrap api is used to send emails to doctors and patients, and the source code was entirely developed in Python. The payments made through this web application are demonstrated using the sslcommerz gateway.

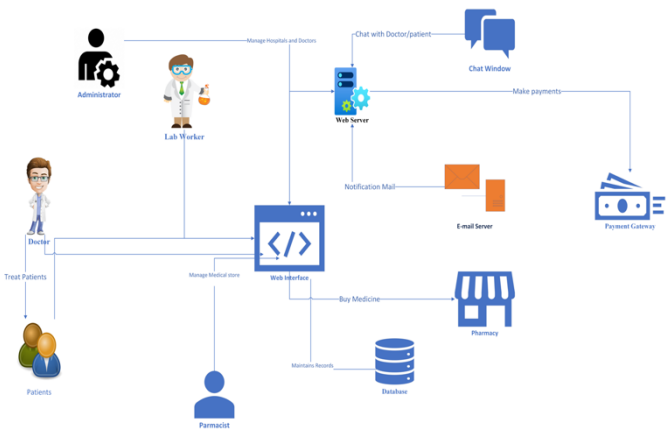

Figure 6: System Architecture

6.2 DATAFLOW DIAGRAM

The below figure demonstrates the working of this webapplication.

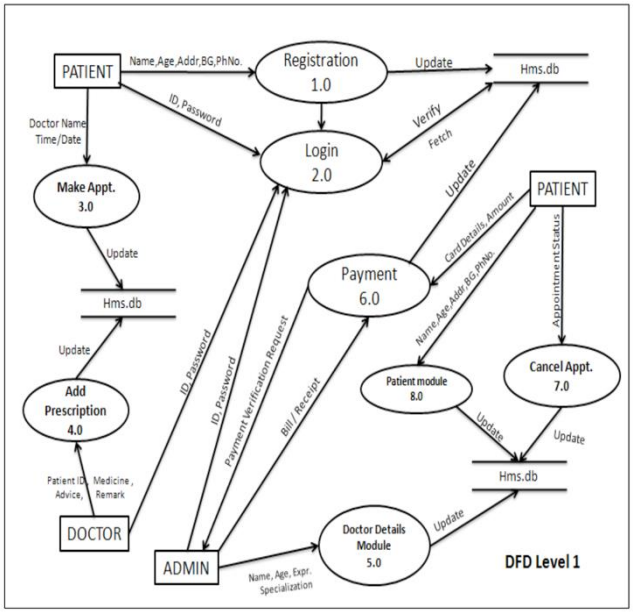

Figure 7: Dataflow diagram

7. OUTPUT SCREENS

7.1 HOME PAGE

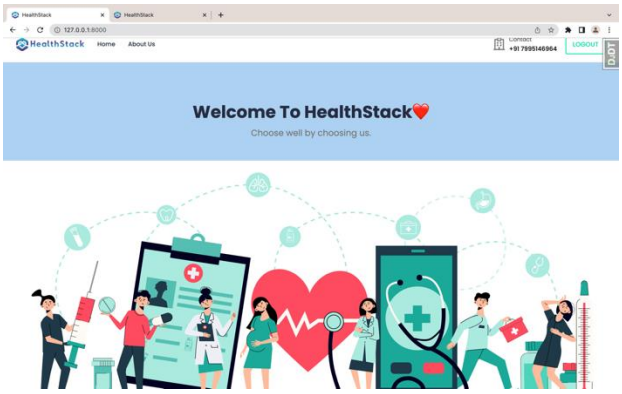

Figure 8: Home screen

7.2 LOGIN PAGE

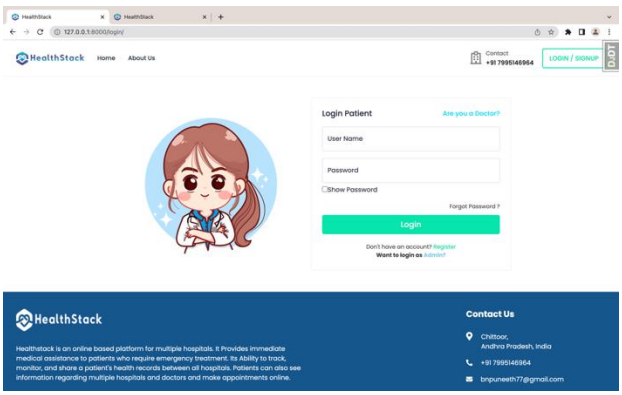

Figure 9: Login Page

7.3 MEDICAL SHOP

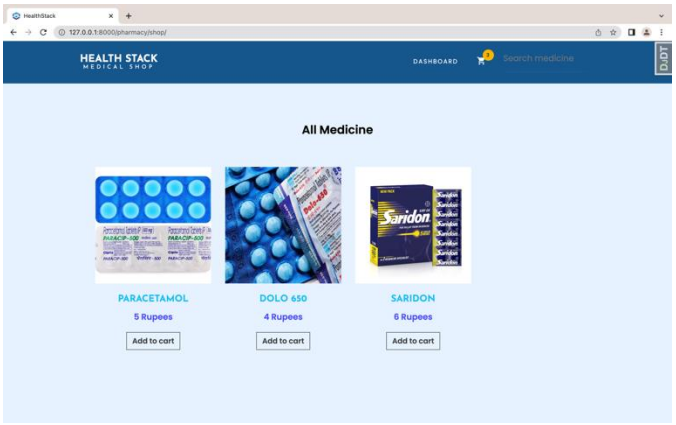

Figure 10: Medical store

7.4 PHARMACIST DASHBOARD

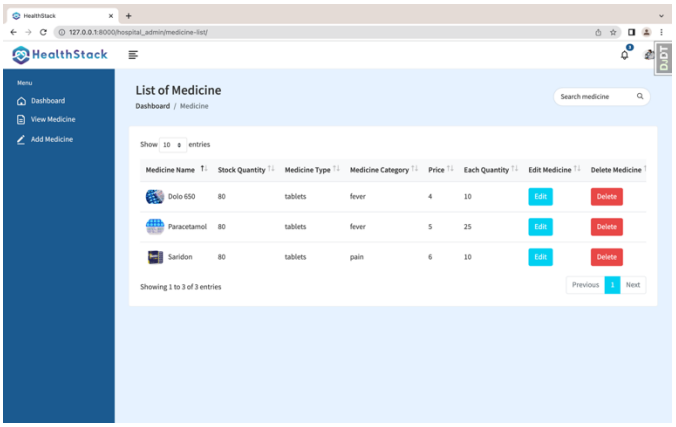

Figure 11: Pharmacist window

7.5 PRESCRIPTION

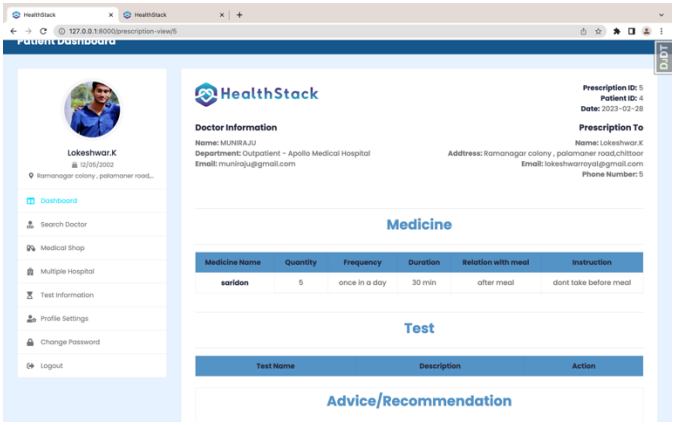

Figure 12: Prescription

8. CONCLUSIONS

The HealthStack system is very affordable and user-friendly. The information about the numerous hospital services it contains will be highly helpful to the general population. Any user can discover which hospitals are more affordable and better suited for a given set of services. Additionally, the user has access to medical information and difficult-to-find medications. Overall, our technology will give the public access to all the critical healthcare information they require. We also create a related application to the website. Users who have registered may access the application and all of the website's features. The application has access to all of the website's information.

ACKNOWLEDGEMENT

The authors would like to thank Ms. S. Parkavi for her suggestions and excellent guidance throughout the project period.

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