Doctor Patient Follow up System

 \mathbf{BY}

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This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled "**Doctor Patient Follow up System**", submitted by Md. Arifur Jaman Mamun ID:181-15-2085, Md Hasibul Hassan, ID:181-15-1824 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 13 January 2022.

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DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Tania Khatun, Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

Our project is Doctor Patient Followup System. In our country now the patients have to suffer a lot with the hospital. It is often seen that many patients do not go to the hospital and get the desired service. And patients waste a lot of time.

We have created this project to reduce the suffering of patients in the hospital. We have the facility to make an appointment with any type of hospital doctor online on this website, again the facility to cancel the appointment and all the details of the doctor. If a patient takes a doctor's appointment, he can download all the details of the appointment in a PDF file if he wants. The website will have 3 login panels. There is a login and registration panel for patients, a login and registration panel for doctors and an administrator login and registration panel. We completed the project with php raw code. The main goal of our project is that patients can make doctor's appointments online at home and which doctor is staying in the hospital. To enhance the security of our website, we've added user email verification options. For which the user will not be able to register using an invalid email address.

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Chapter-1 1.1 Introduction

Patient Doctor follow up System is fully web based dynamic website where patient can easily find the required and available doctor. So that patient don't need to panic for finding doctors. Website based medical service like our "Patient doctor follow up system", which will help the peoples to find any medical services from anywhere without any difficulties in their emergency situations. It will support the people to know their physical health as well as their mental health than past.

By this application people can get the medical services at a time without the facility of examine their body organs. This medical system is more synchronized than other medical management system. It will be more user friendly than others. To make this system we have used HTML, CSS, JavaScript, PHP, MySQL, Apache2 etc. The primary goal of this design is to improve upon the current hospital experience. Although no one wants to go to the hospital, there are instances when it is necessary. We must do so.

The previous hospital system is not very user-friendly. The first major event was the Stem has been in line for several hours. There is a slew of additional issues that need to be addressed. Makes your hospital stay unpleasant. The major goal of our company is to make people's lives easier. In the midst of a crisis We're trying to come up with a system that will help us save a lot of money. People's time by reducing the amount of paperwork they have to do. Existing software: In our country, you can discover Patient Doctor Follow-up System software. They contain a lot of helpful features for the patient, however does not give patients the ability to manage their own data This is what provided us with the opportunity. Basic motivation to create a system that works for everyone.

To get around these limitations, we're aiming to create a social networking-style site for patients that will benefit everyone in the doctor's office as well as their patients. Let's take a closer look at the system and see how it can assist us. There are no such things as things that come out without limits, but we focused on doing the best we could with what we had. Our major goal was to figure out what the patients' characteristics were. They are the system's vast community, and they ought to receive the most out of it. Our current methods, without a doubt, do not equip us with the ability to look for information linked to our hospital. Paperwork, as well as other crucial documents such as prescriptions and test results. We no longer have to be concerned about carrying those reports, which will, of course, be beneficial. In terms of losing those important documents and getting into problems, we are the best. The relief, as well as the benefit, will be enormous. Hopefully, this will be beneficial to us.

1.2 Motivation:

User can find a doctor easily, which type of doctor user want and which hospital the doctor sees patients. A role-based system and can be managed like you are sitting on a hospital. We don't normally go to hospitals unless we have to, and even then, we don't always have a positive experience. We have a variety of issues there.

There is an automatic Patient Doctor Follow-Up System, however it lacks capability for us. While at home, even doctors have no access to their patients' information. It will be fantastic for patients to have an app that allows them to maintain track of their personal information, such as prescriptions, test results, and other crucial documents. Patients will be able to search through all of the available providers and request appointments. They are able to schedule an appointment with the doctor of their choice.

A doctor will go through a similar ordeal. Benefits. This will save paperwork significantly and make things easy for everyone. It is intertwined with it. I've been to the hospital before, and I've also acquired information from others by asking them questions and observing them for a period of time. People's greatest nightmares come true when they have to go to the hospital. Nobody goes to the hospital unless it's an emergency. People become enraged, although they have nothing to do with it. This provided me with the ideal incentive to develop something for them and assist them at a crucial time. I am convinced that this product will be of assistance to them.

1.3 Objective:

To make a standard and structured web application. To enhance the quality of getting the medical services from a remote place. To make the availability of the doctors to the patients in every possible way. Our main goals are to assist individuals in finding doctors and scheduling appointments.

Users may search for doctors, making it simple to locate a specific doctor. A platform that allows doctors to check a patient's previous medical history in order to provide a more thorough examination. Collecting requirements is an essential if you want to develop a flawless system. The study will provide a better understanding of people's needs, as well as the system we intend to develop and how much we will cover. The document will also detail all contact between patients, physicians, and administrative staff.

Patient

- 1. View a list of doctors
- 2. Taking a doctor's appointment is simple.
- 3. Find out when his or her anticipated doctor will be accessible.
- 4. Having access to the doctors' department, which is divided into categories

Doctor:

- 1. This request's access
- 2. Get appointment request
- 3. Examine your medical history.
- 4. I was able to obtain a patient's profile.

1.4 Expected Outcome:

An online scheduling system, sometimes known as a Web-based pattern, lets people to book appointments and reservations for others using any web-connected device, such as a computer, laptop, smartphone, or tablet. Following the selection of a date and time, the system will send a booking confirmation as well as recorded documentation for the following demand. Our system's versatility allows it to be used for a wide range of services and activities for patients and doctors, including.

Individuals save time by not having to take time out of their busy schedules to call their medical, healthcare, or wellness provider. Staff spends a lot of time on the phone booking and can't keep appointments on track, thus individuals save time by booking online. For example, it takes an average of four minutes for a phone booking system to book a hundred patients. It will take less time to get to where our system is now.

If a person becomes unwell and wishes to see a doctor for a checkup, he or she must go to the chambers and wait for the doctor to become available. In order to get an appointment, the patient must also wait in a line. As a result, a messed-up environment is feasible. If the doctor cancels the appointment due to an emergency, the patients will try to create a commotion in the area. There will be no need to line for a long time in this system, and patients will be able to see when doctors are available, allowing them to avoid the massing issue.

The personnel in the doctor's chambers is always willing to accept money in exchange for scheduling people. It is immoral to use this method to get a faster appointment. People will be able to see all of a doctor's available slots in our system, allowing him or her to create an easy appointment for them whenever they need it without having to pay extra money to the staff.

1.5 Features of Online Doctor Appointment Management System:

There are three people that utilize this method. Patients, Doctors, and Admin. As a result, all features have been distributed among these three users.

Admin or Master Users:

- 1. Doctor data may be added, edited, deleted, and seen by the administrator. Admin can view all patient data.
- 2. The administrator may schedule any Doctor Availability data and manage it by editing or deleting it. Admin can view all doctor appointment data and he or she can also process appointment.
- 3. The administrator has the ability to change the details of a user's profile. Admin can login into this system.
- 4. Analytics data is visible to the admin.

Doctor Users:

- 1. This system allows doctors to add, edit, and delete their availability data. Doctor can view only his or her appointment data, they cannot see other doctor appointment data.
- 2. 2. The doctor has access to the information about the patients who have scheduled an appointment.
- 3. In a patient appointment, the doctor can leave a comment.
- 4. The doctor has the ability to change the details of a patient's profile.
- 5. This system allows doctors to log in.

Patients Users:

- 1. Patient can view Doctor Availability data on web page.
- 2. Patient can register into this system.
- 3. Patient can login into this system.
- 4. Patient can book appointment and they can also cancel appointment.
- 5. Patient can download appointment in PDF format also.
- 6. Patient can change their profile details also.

Chapter-2

BACKGROUND

2.1 Preface:

The major purpose of this project is to get the appointment in a short amount of time and without causing any inconvenience to the patient. We created this project for regular individuals who need to see a doctor and require an appointment quickly. They can book an appointment online and obtain a checkup at their preferred time

This approach, on the other hand, allows users to acquire their required medicine in bulk. As a result, they will not be concerned about obtaining any medicine when they require it. It will be quite beneficial for people if they can obtain all of the solutions at the same time over the internet. As a result, people will be more inclined to use the internet and obtain all medical solutions through a web-based system.

It also aids in the discovery of this system's flaw, allowing required actions to be done to improve the project by adding and updating new features.

2.2 Related works:

There are some similar systems available right now, but not many, and none are completely identical. Many aspects of the system have flaws. Based on the findings of a comparable investigation. We became interested in further developing our technology. Some of our project's associated systems are listed below.

We looked at a lot of websites relating to medical health awareness, and the first one that attracted our interest was 'Doctorola.com.' In this system, users must find a doctor or hospital in a separate area and contact them to schedule an appointment. Because there is no user login option or personal profile, consumers are completely cut off from receiving more services in the future.

'Doctorsbd.com' is another endeavor. Only a list of doctors is available on this website. Users may only find out where their service is located on this page.

2.3 Comparative Studies:

Many people attend a healthcare clinic or hospital on a regular basis and face issues such as not knowing what a doctor's specialty is, having to wait a long time for a doctor appointment, and not knowing what a doctor's cost is. An appointment can be scheduled in a variety of ways.

A user can either attend to the hospital directly for consultation or use a Web-based system to schedule an appointment from home. To address this issue, we created an appointment system that improves patient satisfaction by providing dependable and fast access. As a result, we want to provide a system that will be extremely beneficial to them. Our approach will deliver the greatest results while also saving them time.

The internet is extremely important in our current technological society. A Web-based system is another term for an online system. Because the world is moving at such a rapid pace, there is always a need to communicate more quickly and efficiently.

There are no such things as things that come out without limits, but we focused on doing the best we could with what we had. Our major goal was to figure out what the patients' characteristics were. They are the system's vast community, and they ought to receive the most out of it. Both physicians and patients benefit from adopting this approach.

2.4 Scope of the Problem:

As previously stated, people experience challenges in getting appointments with doctors. Our current system does not meet the requirements. As a result, we can recapitulate an issue here:

- 1. People may not have complete faith in online systems, hence they do not get the full benefits of these systems.
- 2. People do not have complete faith in online systems, hence they do not profit completely from them.

3. Using a variety of platforms may not be sufficient for many patients to get an appointment with a doctor.

Our technology provides answers to these issues that will benefit patients. The system may be accessed at any time and from any location. This method is highly straightforward and user-friendly.

A few examples are:

Assisting Patients

- 1. There is a large database of doctor information.
- 2. Appointment in a clever manner.
- 3. Find a doctor by rating or location.
- 4. Decrease the time spent waiting for an appointment.
- 5. It is possible to save a prescription for later use.
- 6. Cost savings.

For Doctors, helps

- 1. Patient ratings can be used to determine acceptance.
- 2. There is no requirement for an assistance for the appointment.
- 3. Easy access to a patient's medication history.

2.5 Challenges:

Each job comes with its own set of difficulties. As a result, we must also overcome a few obstacles.

1. If a doctor fails to verify the notice for confirmation of a patient's booking, the system's principal goal will be achieved.

2.	Because it is a Web-based system, users who need to make appoint bookings online using any web-connected device (computer, laptop, stablet, etc.) will be unable to do so.	
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Chapter 3

Requirement Specification

3.1 Requirement and Analysis:

In our system, there are some basic requirements that are required for using the system.

Some of them are given below in table:

Serial No	Requirement name	Requirement Analysis
1	Admin login	The admin must be signed in using his or her email and password in order to change any of the site's catalogs.
2	Patient registration	Before going to the doctor appointment page, the patient must first register on the website.
3	Patient Login	Already enrolled patients must login using their email address and password.
4	Doctors login	To see any active patient details in the site, Doctors must be logged in with email and password.

3.2 Data Flow Diagram:

Data Flow Diagrams depict the flow of information from external sources into the system, as well as from one operation to the next. The system is our "Doctor Patient Follow up System" Website, and the entities are the Administrator, Doctor, and Patient.

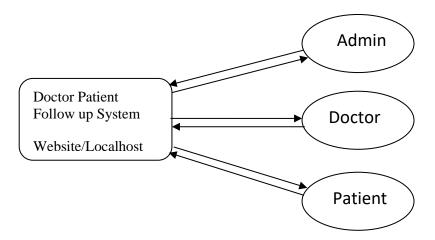


Figure 3.1: context

This is the context level diagram of a complete system called "Doctor Patient Follow up System". Here entities are Doctor, Patient and admin.

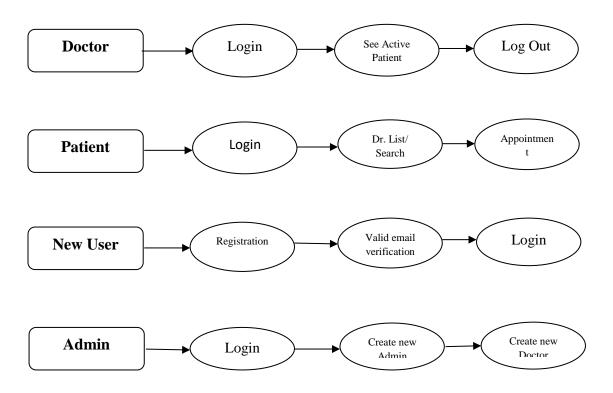


Figure 3.1: Data Flow Diagram

The doctor must login. And the admin will create the login system. After the doctor logs in, you will see the details of all the patients and the active patient and later the doctor will be able to log out again and leave the system.

Then the patient must login. After logging in the patient will see the doctor list and can read the doctor list and make an appointment.

For new patients we have a system that is a registration system and we have added a valid email verification feature in the registration system. In case of user's registration, you have to register by email and then you can login when the verification is completed.

Admin needs to login. Then if the admin wants to add a new admin account, he can set the password and username. Admin can control the whole system. And he can add and delete the doctor account.

3.3 Use case modeling and description:

Use case diagrams are used to gather information about a system's requirements, including internal and external aspects.. Our system's use case diagram is presented below.

Admin, Doctor, and Patient are the actors.

The use cases for these actors are as follows:

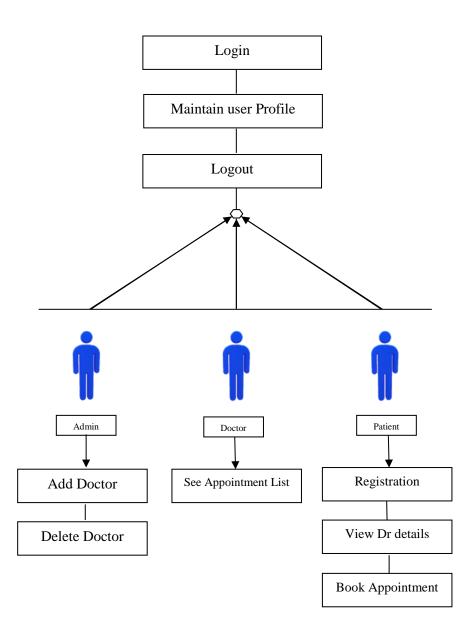
<u>Admin:</u> Login, logout, add physicians, alter all accessible access, delete doctors, keep user profiles up to date, and manage appointments.

<u>Patient:</u> Create an account, log in, log out, modify your profile, and schedule an appointment.

<u>Doctor:</u> Log in, log out, modify your profile, and check your schedule.

The following figure depicts a use case diagram.

Use case diagram:



3.4 Design Requirement:

Our system is a dynamic website. The front end and backend of our website are built using web programming languages. For the frontend, we used HTML, CSS, JavaScript, and the Bootstrap framework. The backend, on the other hand, is built using PHP, a well-known programming language. The MySQL database server assists in making it dynamic.

HTML stands for hypertext markup language, which is used to format text and multimedia and build hypertext links between them. The structure of a website is described in HTML. It instructs the browser on how to render the material.

CSS is a language for specifying the appearance of Web pages, such as colors, formats, and text styles. CSS is an HTML-independent markup language that may be used with any XML-based markup language. It's used to give web sites a more appealing appearance. A website's visual appeal is extremely significant.

JavaScript is a computer language used to create the frontend of a web page. It gives a static web page a more appealing and interactive appearance. For the client side, JavaScript may be used to create a variety of functions. It relieves the strain on the database system, allowing the webpage to load faster.

We think that development should be a fun and creative process. Laravel tries to alleviate the agony of development by facilitating typical chores like authentication, routing, sessions, and caching, which are utilized in the majority of online applications. The finest code is written by happy developers.

Chapter 4

DESIGN SPECIFICATION

4.1 Front-end Design:

The front end web development and web design. For our front end design, we employ HTML, CSS, and JavaScript.

Fonts, drop-down menus, contract forms, and other items are examples of this. We've included some front end home page design in this area.

CSS is based on the creation of rules. These rules are applied to several components on the site at the same time. The elimination of HTML's repetitious coding style makes development work more efficient and less tiresome. Errors are also significantly minimized. Faster page loading is an underestimated yet critical property of CSS. CSS rules are downloaded once and cached by browsers, allowing them to swiftly load all of a website's pages. It enhances the overall user experience by shortening the time it takes to access the website.

4.2 Back-end Design:

The backend is usually divided into three sections. A database, a server, and an application The user enters the information that the program requires, and the application stores it in a database that was created on a server. We mostly made use of phystorm.

4.3 Implementation Requirements:

This section's major goal is to make everything easier, more helpful, and more user-friendly. We have a great suggestion for the implementation need. The following is a list of requirements for implementation.

It's a lot easier to handle.

User-friendly

It's a lot easier to interact now.

It's a lot easier to make.

Dynamic pages

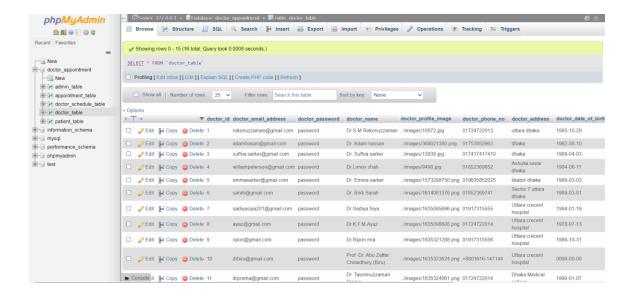
Delightful

Chapter-5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database:

Our database was created using the "MySQL" programming language. MySQL is a free and open source relational database management system. It works as a server, allowing several users to manage and create databases. It's a key component of the LAMP stack of open source web application software used to create websites. Apache, MySQL, and PHP are referred to as LAMP.



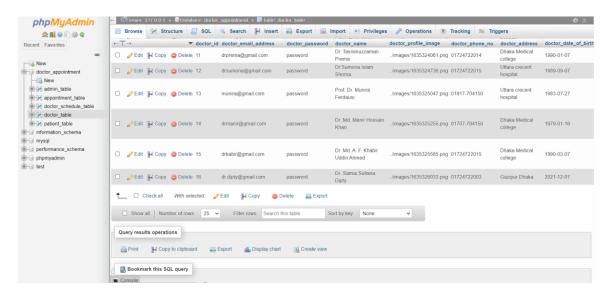
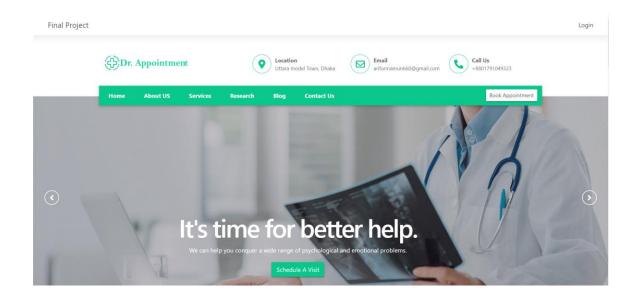


Figure 5.1: Database Implementation

5.2 Implementation of Front-end Design:

This is the "Patient and Doctor Appointment System" home page. To get access to the wed site and to utilize it, a user must first log in.







octor Schedule	List					
Ooctor Name	Education	Speciality	Appointment Date	Appointment Day	Available Time	Action
Dr.Sadiya Siya	MBBS	Gynacologist	2021-10-30	Monday	18:00 - 20:00	Get Appointme
Dr. Adam hassan	MBBS MD(Cardiac)	Cardiologist	2021-11-06	Thursday	10:00 - 13:30	Get Appointme
Or. Tasnimuzzaman Prema	MBBS,FCPS	Gynacologist	2021-11-06	Saturday	14:43 - 23:43	Get Appointme
Dr.S.M.Rokonuzzaman	MBBS,FCPS,MD(gastro Enterology)	Specialist in Medicine	2021-11-26	Wednesday	12:00 - 15:00	Get Appointme
Dr. Adam hassan	MBBS MD(Cardiac)	Cardiologist	2021-12-10	Friday	13:14 - 23:25	Get Appointme
Dr. Binti Sarah	MBBS MD (Medicine)	General Physician	2021-12-11	Wednesday	15:30 - 18:30	Get Appointme
Prof. Dr. Abu Zaffar Chowdhury (Biru)	MBBS, MS (Ortho)	Arthroscopy And Sports Medicine (India) Orthopedics, Arthroscopy, Arthroplasty	2021-12-11	Saturday	14:35 - 14:50	Get Appointmen

Figure 5.2: Homepage of "Patient Doctor follow up System"

This is the "Patient Doctor Follow-up System" registration page. To gain access and use, patients must first register.

Register	
Patient Email Address*	
This value is required.	
Patient Password*	
This value is required.	
Patient First Name*	Patient Last Name*
Patient Date of Birth*	Patient Gender*
	Male
Patient Contact No.*	Patient Maritial Status*
	Single
Patient Complete Address*	
	4
P.	egister
	-gister-
l l	Login

Figure 5.3: Registration page of "Patient Doctor Follow-up System"

This is the login page of "Patient Doctor Follow-up System". To login user have to enter valid email and password .

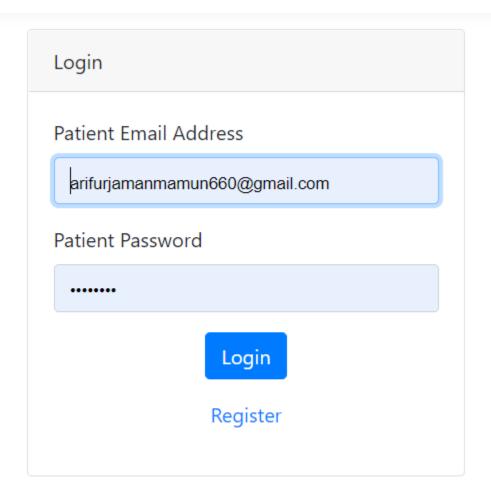


Figure 5.4: Login page of "Patient Doctor Follow-up System"

This is the doctor Schedule option for patient. Patient can find doctor by a name, education, and Speciality.

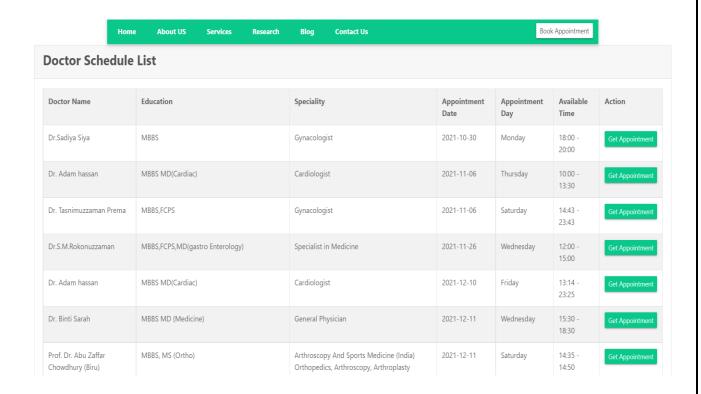


Figure 5.5: Find Doctor

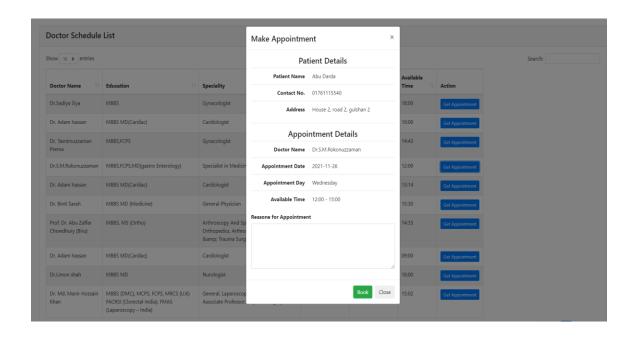


Figure 5.6: Doctor Appointment Submission

Patient can see their appointment pending if doctor approved or not

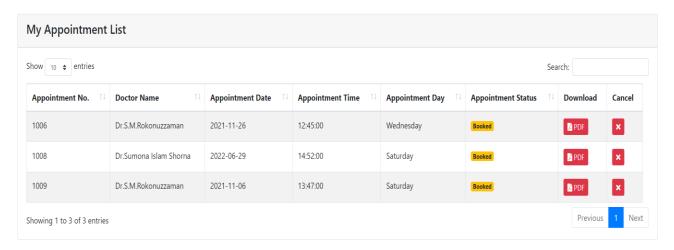


Figure 5.7: Pending Request

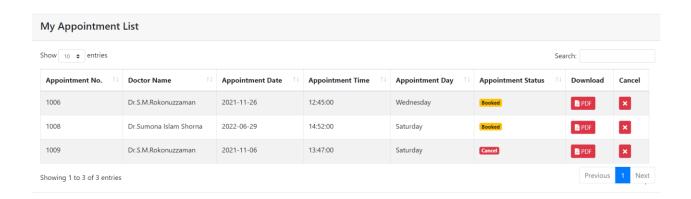


Figure 5.8: Canceling Request & Download

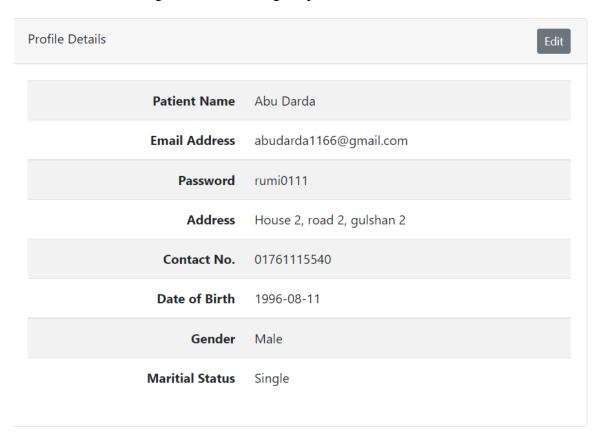


Figure 5.9: Patient Profile

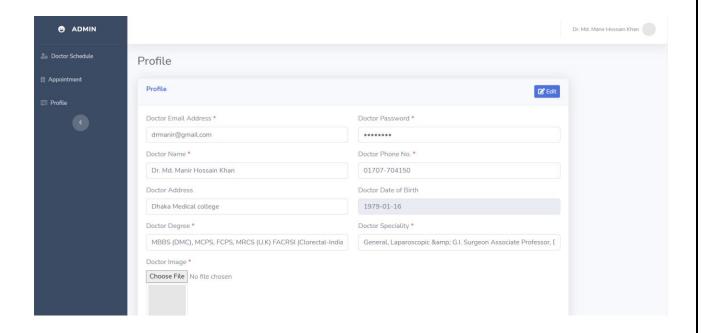


Figure 5.10: Doctor Profile

5.3 Implementation of Interactions:

In today's system, interactions are commonplace. It is essential for a system to be dynamic and appealing to users. It's also critical to make a system interactive. As previously said, we attempted to create a user-friendly and engaging platform. It should be done in such a way that the user is drawn in.

5.4 Testing Implementation:

The goal of this test is to determine whether or not our system meets the requirements. This technology was built with security in mind. Each and every piece of information that a user enters into our system must pass this test.

5.5 Test Result and Reports:

Table 1: Registration and Login Test Case

Sl No	Test case	Input	Expected outcome	Actual output	Result
1	Email check	Input without @	Invalid email	Invalid email. Must have @	Passed
2	Valid phone number	Input numeric value	correct	Correct	Passed
3	Invalid phone number	Input character	Incorrect	Numeric value required	Passed
4	Special character	Input special character	Special character not allowed	Not allowed	Passed

Table 2: Input User Information Test Case

Sl No	Test case	Input	Expected outcome	Actual output	Result
1	Display the webpage	Tested on us browser, chrome	Display successful	Display successful	Passed
2	User name	Wrong	Login failed	Login failed	Passed
3	Blank or Incorrect pass	Wrong password	Login failed	Login failed	Passed
4	Username	Input character	Special character not allowed	Letter and whitespace allowed	Passed

Chapter-6

Impact on Society, Environment and Sustainability

6.1 Impact on Society:

Doctor and patient appointment system is a very exciting topic to work. The scheduling of doctors and patients is a fascinating subject on which to study. We were presented with a number of difficult tasks after finishing the assignment. Our society's healthcare system is becoming increasingly crucial. As a result, we've made the decision to construct this system.

We looked into a number of systems that pointed us in the right direction for developing our own. We connect with folks to determine what type of difficulty they are dealing with. They were overjoyed to accept this approach because it provides them with some comfort in this modern world.

Despite our accomplishments, we faced numerous obstacles in completing this project. Because it is an online web-based system, both the doctor and the patient must follow the guidelines in order for the system's aim to be achieved. Many types of web projects can be seen nowadays. The project we have created will benefit the common man a lot. To use this web application we created, the user will need a smartphone / computer. Through which the user will be able to make an appointment with the details of the doctor. And if people use this method, people will not have to suffer in the hospital anymore.

Our web application is suitable for use by all people. Because we made it a lot easier to use. We think this project will be very useful for everyone because it has the facility to make appointments for all the doctors of all the hospitals in Bangladesh.

I think the web application we created for our country will play a very important role in social impact.

6.2 Impact on Environment:

The online system is always a work in progress. It improves with each passing day, making life easier for everyone. This might be a game-changing web tool that aids in the connection of doctor and patient. We anticipate that in the future, we will be able to improve this method.

Advanced functionality and the user interface will be improved in the future. Our system is already user-friendly, but we'll keep working to make it better in the future. Because it is focused with the deep relationship between development and the environment, its mission is to investigate ways and means to attain sustainability in all human activities aimed at such progress. Technical, economic, ethical, and philosophical aspects of sustainable development; local, regional, and global sustainability, as well as their practical implementation; have attempted to develop and implement sustainability indicators; and have developed, verified, implemented, and monitored policies for sustainable development.

6.3 Sustainability Plan:

We have the facility to take appointments in all the hospitals in this project. And our next goal is to make it easier for the users. I am working to add many more features. E.g.

- 1. Doctor tracking option.
- -Doctor tracking option has not come up in any web project in Bangladesh till now. We are working on it first. And it is a tracking system that will benefit people a lot. As people can see when the doctor came to the chamber and when he left the chamber. In this way, people can easily be present at the hospital at the right time according to their serial.
- 2. Ambulance tracking option.
- -Every ambulance in their fleet can be tracked in real time using a GPS tracking device. When the hospital gets a request for emergency ambulance service, the management can deploy the nearest ambulance to the emergency location.
- The time it takes for an ambulance to arrive to the patient can therefore be reduced.
- Using the tracking, notification, and route history tools, the admin may determine if the driver took the most efficient route.
- 3. Hospital location option.

Chapter-7

Conclusion and Future Scope

7.1 Discussion and Conclusion:

To gain knowledge and expertise in web design and development, we finished our Web Based Doctor Patient Follow Up System project. We, the members of the group, are really enthusiastic in pursuing a career in web design and development. As a result, this initiative is extremely important beneficial to our future We've gained a variety of web development and design skills.

I learnt a great deal about it. We now have the ability to create a comprehensive web-based system.

That can meet the needs of the people During the development phase, we encountered several issues.

And attempted to come up with the best solution As a result, we learnt how to cope with the situation.

During the development of a web-based software, this issue may occur. It will not only assist us in our future careers, but it will also assist us in becoming a skilled web developer.

7.2 Scope for Further Developments:

We attempted to include a variety of current web technologies into our system. However, owing to time and resource constraints, we were unable to complete the task. We'll try to make it more effective. Many features will be expanded in the near future. Here are a few examples:

- To connect with the doctor in online, we will include video calling.
- For online payments, we will use a variety of payment options accessible in Bangladesh.
- For a better user experience, the system will be updated on a daily basis.
- For each of the physicians, we'll provide a general review section.
- Doctor tracking option.
- Ambulance tracking option.

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Plagiarism Report

Doctor Patient Follow up System

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