

DOCTOR'S APPOINTMENT AND MANAGEMENT SYSTEM

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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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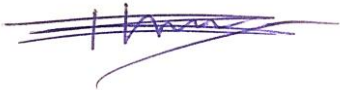
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APPROVAL

This Project titled “**Doctor's Appointment And Management System**”, submitted by Minhaj Uddin , Id: 171-15-8769. Md : Ismail Hoque , Id: 171-15-8605. And Tanbhir Hasan, Id: 171-15-9109 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 3 June 2021.

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We hereby declare that, this project has been done by us under the supervision of **Shah Md: Tanvir Siddiquee**, Assistant Professor, 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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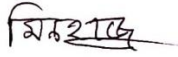
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ABSTRACT

An online dr. appointment and management system shows to patients what time slots are available or not. It is time-efficient, provides transparency and helps the patients feel more informed and in control. As the online appointment booking system works 24/7, this gives freedom to potential visitors to book an appointment anytime they want. An online doctor appointment booking system can prove to be a boon to doctors and patients alike. For those among us who have seen the waiting room of busy doctors, it will draw memories of patients and their attendants crowding around the receptionist. It was not necessarily first-in and first-out. Many times it was based on who was able to throw their weight around and seize the opportunity to stride in to meet the doctor even before the earlier patient had walked out. In some cases tokens were given out that represented our number in the queue. The wait could be quite long and if the patient was not quick to mark her presence when called out it could mean a further wait. Patients being sick, there was always a high probability of the attendants also falling sick as everyone was crowding around each other. This evolved to a telephone-based appointment booking, mainly managed on paper. It was hardly flexible. No-shows were very common. With the advent of Personal Computers, appointments were maintained in the desktop. This certainly brought more order; however, appointments still required the patient to phone in to the receptionist to book the appointment. Widespread use of mobile phones and the internet has driven the need for doctors to offer the facility of online appointments – a far superior option for both doctors and patients.

That's why we were proposed our supervisor about this system and finally got the green signal and started our work on focus our goal. This system will be a friendly and will be more productive.

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CHAPTER 1

Introduction

1.1 Introduction

Doctor's appointment and management system is a system where a patient can easily access to the website and book their appointments. With the help of this appointment system the patient can book their appointments form anywhere. So you just only need a device which is connected to the internet to get the information whatever you want to browse the articles of the doctor's or to book an appointment or to hire a nurse for take care, or see the history of yours of previous checkup. In the doctor's appointment and management system a patient will get a lot of facility within a few minutes as we design our system. Like here a patient will get a quick schedule of a reputed doctors with their areas, make a consultant with emergency numbers, read a lot of article which are written by famous nutritionist, some popular doctor's. There are also be good feature as a nursing. It's very cool and very beneficial feature at this covid-19 period.

So basically, this appointment system offers more productivity of hospital staff. In a word this system will help both of us whose are busy in their life they don't go to the hospital for booking the appointments as it is a self-operated system with a device and also those hospital staffs that they can focus to other task for improving their service and be more productive with their works.

1.2 Motivation

In the olden times, family doctors and physicians were always present at our break and call. But with the change in times, it is almost impossible to find a doctor who is readily available.

So, from the doctor appointment online services provides which doctor are available for which sectors can easily find that. To reduce the time duration to make an appointment with a doctor we can find many more special doctors schedule in online throughout our

system. In our system you can make appointment in 24/7 hours in any location. So, it's a huge opportunity to the people to maintain their health.

1.3 Objective

- Our main objective is within a short time to reach a patient to a doctor for consult their sickness.
- Another is to be more productive of hospital staffs to do other important sectors.
- And also, to be more informative to the user of their zone's hospital and doctors.
- For the doctors favor to reach the patients through online help and consultant and so on.

1.4 Expected Outcome

Dr. appointment system will help the user to communicate the dr. very fast. And also, it has some cool feature like consult the dr. through online, or book any nurse to look after any patient whose are not able to come to hospital.

- Easy and Fastest Doctor Appointment.
- 24 Hours Appointment Booking Service.
- Appointment for Any Location.
- Less Waiting Time for Consultation.
- User can select the appointment time according to his preference.
- Finite Search from The Quite Range of Doctors.

Chapter 2

Background

2.1 Preliminaries/Terminologies

So basically, this chapter will cover the background study about our developed system. So obviously there are no objections that our lives are changing day by day throughout digitalization. And the health sector also developed a lot. So, flow of digitalization it's also important that how we can easily communicate with doctors so keeping that thought in our mind we research around our sides and we feel that this is one of the best options to develop a system where people can make an appointment online with a smart device from any location. They just want a device and internet connection.

So, through research about this system, we find some sources and some platform that help us a lot to develop this platform for the patients and doctors both usable. Through our investigation we know that in the previous projects, simply book.me, there are some important hints about our projects. And we observe that information and build our own system.

2.2 Related Works

As we already mention about our plan and our researches about dr. appointment and management system, we saw some fantastic work and we are cheered up our work and finally complete that system. In previous projects, simplyBook.me, projects world saw some work but their platform is different. So, we decided to build our system in php, Laravel.

So for our developing project to make more productive and to add more cool features we research here and their source and find Doctorala.com this system is really cool but we

find some lacking's like there have no user login or to store personal information which is detached their information with the future analysis that actually what was the condition before they had and also this system loading time disappoint us.

2.3 Comparative Analysis

Our modern age of technology is greatly dependent on internet. An online system is also known as a Web-based system. The world is going so fast so there is always a desire to everyone to communicate faster and more effectively. Keeping that word in our mind we explored our busy life limitation and we want to overcome those limitation's. Our main focus was to utilize the time both of the doctor's and the patients. They are the large community of this system and they deserve to get the most facility of this system. By using this system both doctors and patients become more beneficial.

In our daily life we are so busy our day to day works. From the pressure of our profession, we are not able to stay long for make an appointment of a doctor. For resolve this problem we built this web-based project named is dr. appointment and management system.

2.4 Scope of the Problem

As we said before our main motto is too easy our life with healthcare system. There always be a some lacking of our daily life. If the user use this they will know that how easy and user friendly it is.

For solution of a patient there will be a huge database where will keep the dr. information. Again, there will be emergency knock to the doctor's, also will available ambulance call system certain area.

For the solution of a doctor, they don't need to keep an assistant to maintain the serial for checkup. With a notification or reminder doctors will know the time and the patient in queue. And also check the patient's checkup history.

2.5 Challenges

As it is a web-based project, we have some limitation and frankly speaking we also face some problems to do more interesting this project and added some cool feature anyhow we overcome that challenges. First and main challenge is it's required a huge database to store that information and some features information. And another we think that it's need a smart device, that's it.

Chapter 3

Requirement Specification

3.1 Business Process Modeling [1]

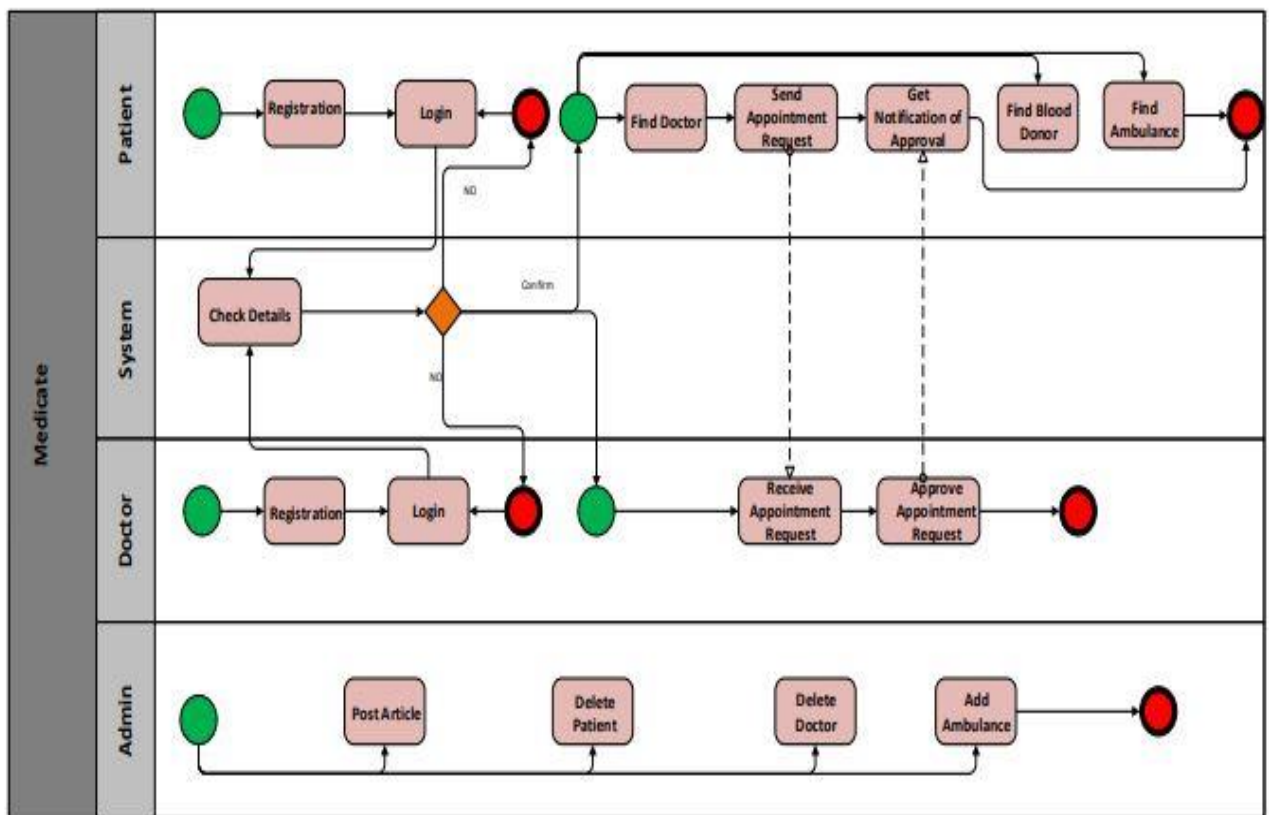


Figure 3.1: Business Process Modeling of Amar Doctor

3.2 Requirement Collection and Analysis

Requirement collection and analysis are always critical side of any project. any project will never end successfully without data collection, analysis, or good planning. When we develop a project, the deadlines for completing the project have already been indicated. Therefore, project work must be planned and executed on time. Our project is a web-based online medical appointment system. Analyzing and collecting the needs was our great challenge when we started thinking about this project. After starting the analysis, we identified some important characteristics that enhance our project.

Hardware and software requirements for our system:

If anyone installs any software or hardware for their computer, they must first confirm that their computer is compatible with the system. So, we need internet connection-based system hardware, such as computers, laptops, tablets, smartphones, etc.

We used some software tools and the development platform is described below:

- HTML [2]
- CSS [2]
- Java script
- Bootstrap [3]
- Laravel framework
- PHP [2]
- My SQL

3.3 Description and Case Modeling

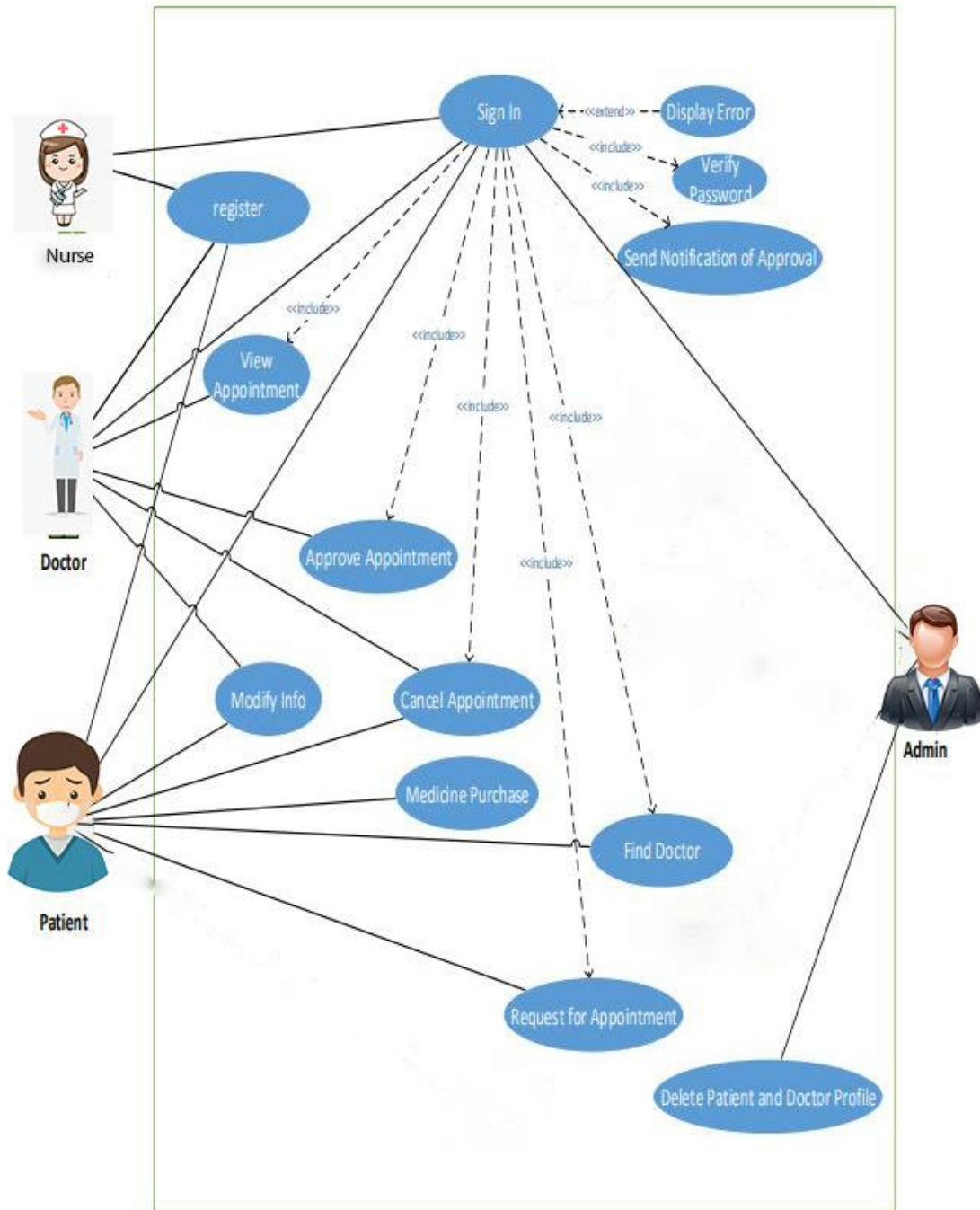


Figure 3.2: Use Case Modeling of Doctor appointment

Case 1: Login

Leading character: Doctor, Patient

Requirement: Must have to complete registration

Primary benefit scenario:

- 1 Patient puts email id in the email section
2. Patient puts password in the password section
3. Patient presses the login button

Exception Scenario:

1. Password is wrong
2. Password is empty

Case 2: Find Doctor

Leading character: Patient

Requirement: Patient has must logged in

Primary benefit scenario:

1. Patient search doctor
2. Patient views doctor

Exception Scenario:

1. Doctor's list can't be empty

Case 3: Make appointment

Leading character: Patient

Requirement: Patient has must logged in

Primary benefit scenario:

1. Patient views appointment
2. Patient selects appointment
3. Patient books appointment

Exception Scenario:

1. Appointment can't be empty

Case 4: Approval appointment

Leading character: Doctor

Requirement: Actor has must logged in

Primary benefit scenario:

1. Actor views request
2. Actor makes approval
3. Actor cancels approval

Exception Scenario:

1. Approval request can't be empty

Case 5: Find Nurse

Leading character: Nurse, Patient, System

Requirement: Actor has must logged in

Primary benefit scenario:

1. Actor's search Nurse
2. Actors view Nurse list

Exception Scenario:

1. User have to find the

3.4 Activity Diagram [4]

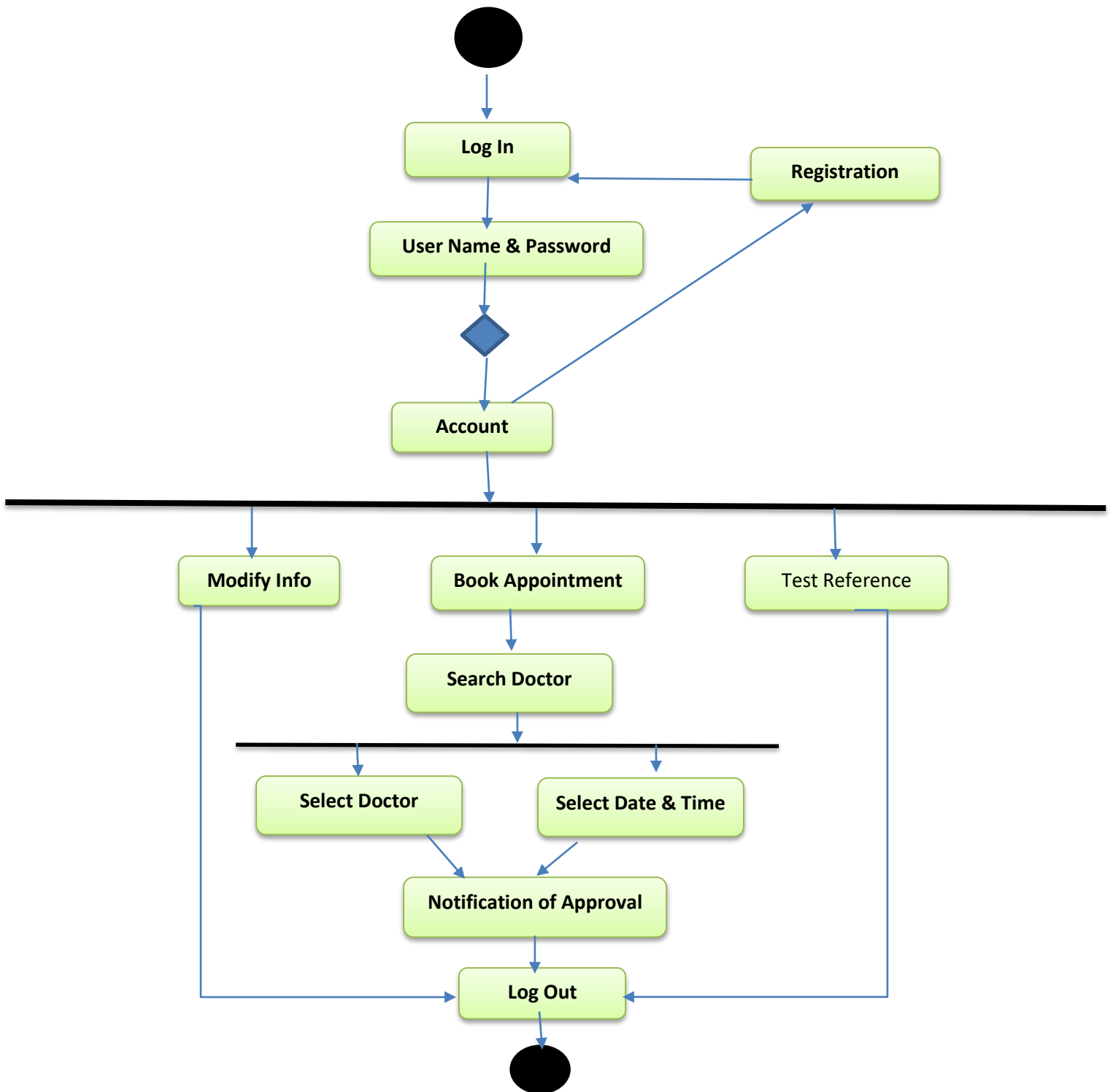


Figure 3.3: Activity Diagram of Patient

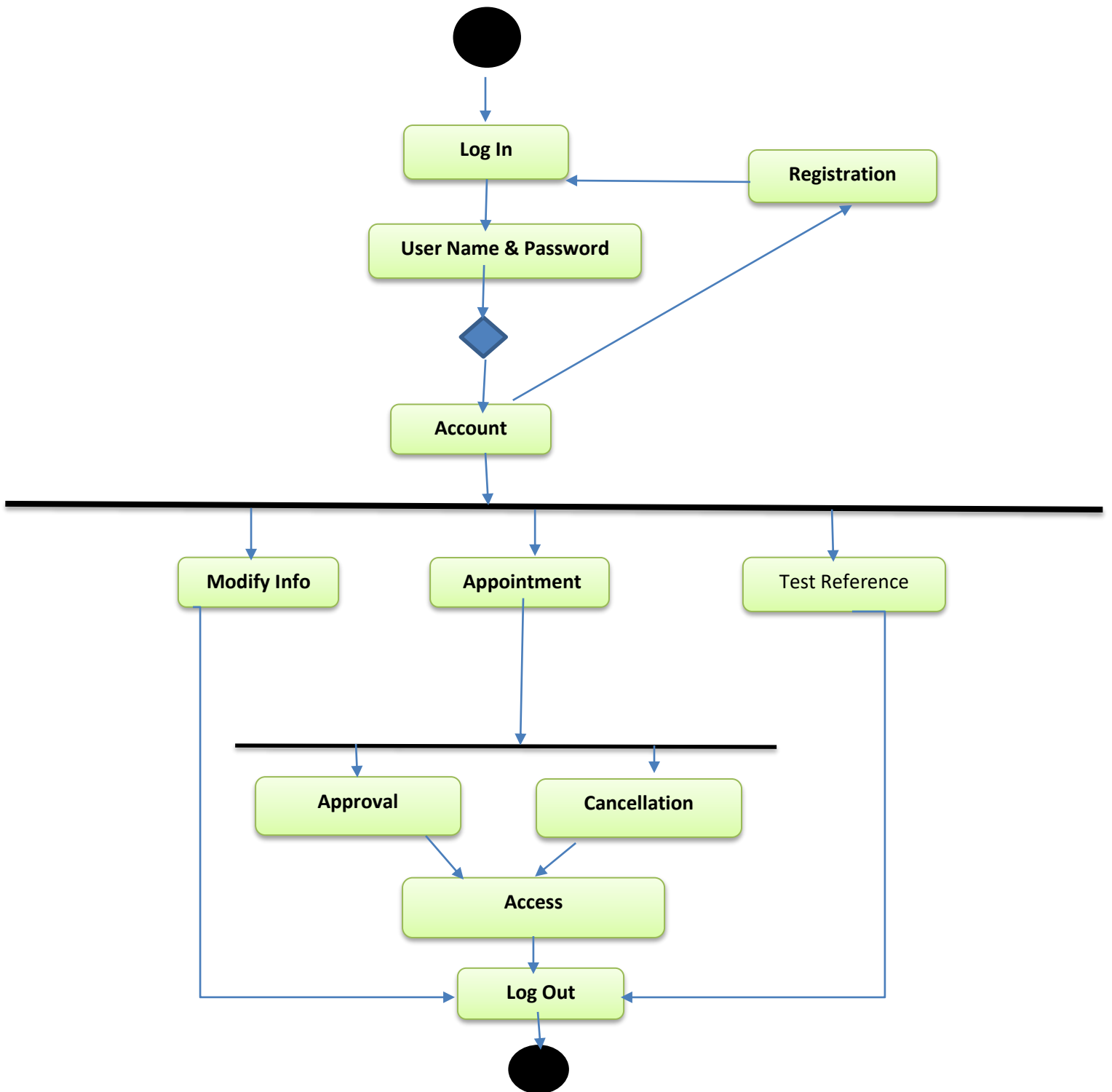


Figure 3.4: Activity Diagram of Doctor

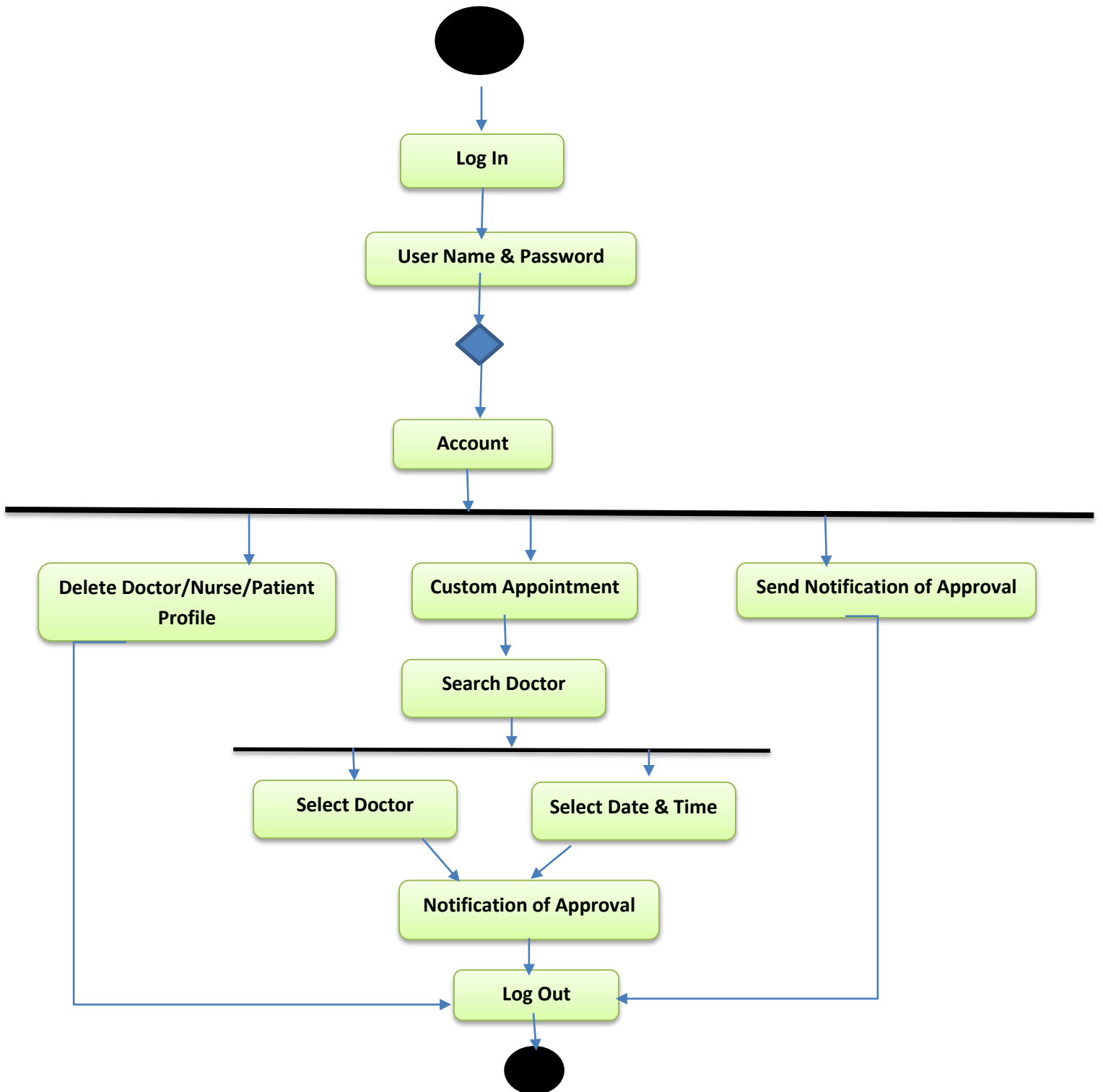


Figure 3.5: Activity Diagram of Admin

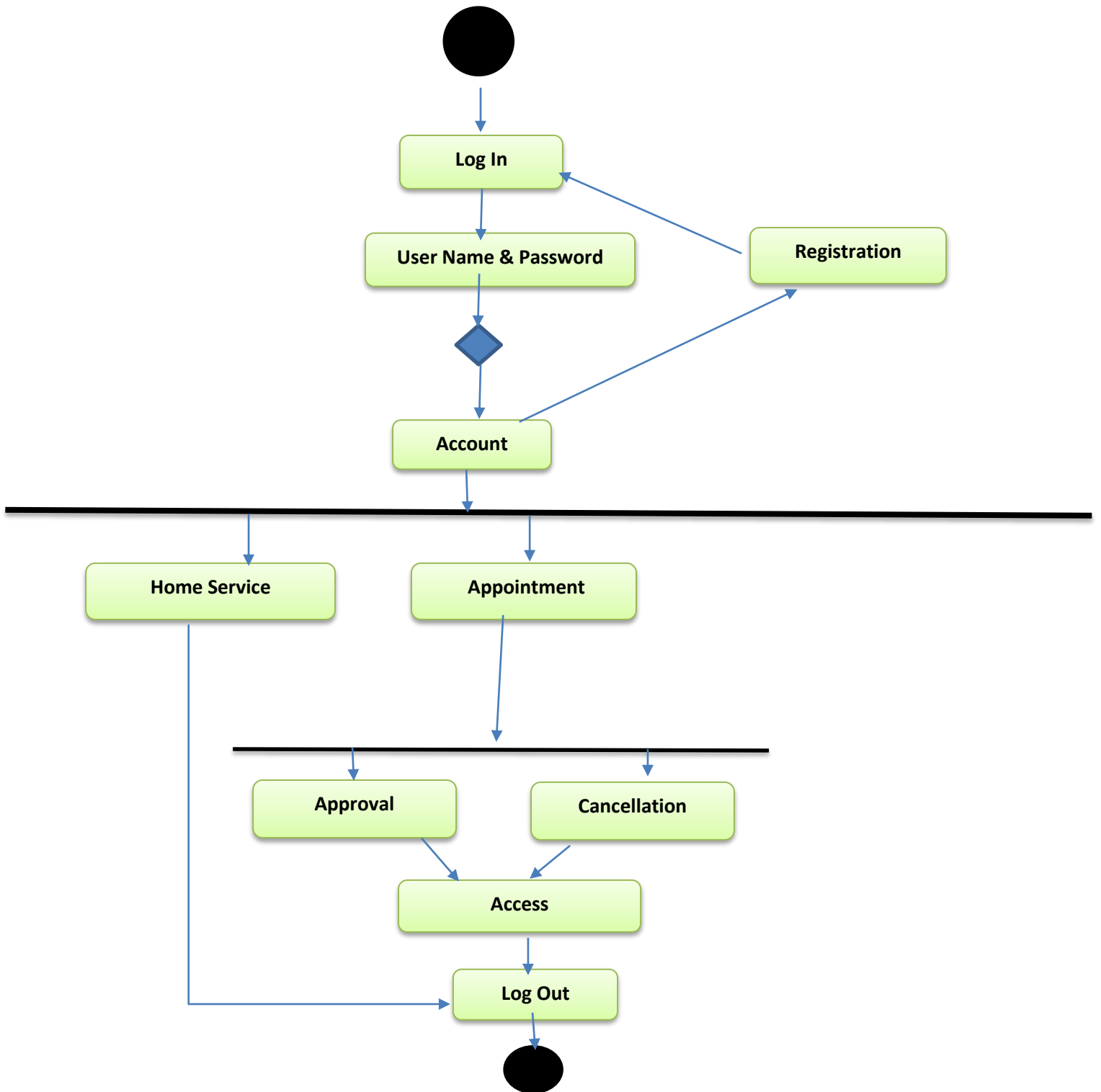


Figure 3.6: Activity Diagram of Nurse

3.5 Design Requirement

If we design software or a system, we consider certain requirements for the project to be effective. We have tried to create an easy-to-use web application. The user interface of our system is very simple, anyone can use it without any problem. For a better understanding, we have developed a business process model, a use case diagram, an activity diagram, and a logical data model. We use MySQL to design our database. For the interface design, we use HTML, CSS. We use OOP, the Laravel framework, and PHP for the backend design.

Chapter 4

Design Detail

4.1 Front-end Design

We know, front is normally designed in two parts. They are web design and front-end web development. We use HTML, CSS, and JavaScript, Bootstrap for our interface design. These include things like drop-down menus, fonts, contract forms, and more. In this section, we include some home page cover templates.

4.2 Back-end Design

The backend is normally designed in three parts. A server, an application, and a database. The user has entered the necessary data for the application that stocks them in a database which is created on a server. We use Laravel framework, PHP, My SQL etc.

4.3 Interaction Design and User Experience (UX)

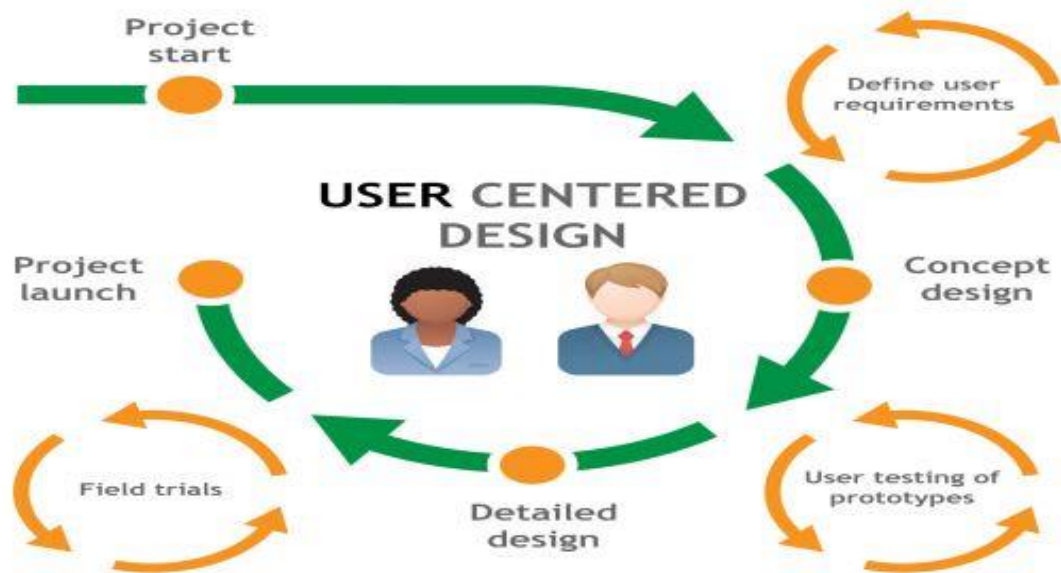


Figure 4.1: UX

4.4 Implementation Requirements

Here, primary task of this part is to make or make everything simpler, more useful, and easier to use. The implementation requirement gave us a very good idea. The list of operation qualification is provided below:

- ✚ Easy to create
- ✚ Easy to interact
- ✚ Easy to use
- ✚ Pleasant
- ✚ Dynamic pages
- ✚ Easier to manage

Chapter 5

Implementation and Testing

5.1 Implementation of Database

We use "MySQL" to design our database. It is an open-source relational database management system. MySQL works as a server and it allows multiple users to manage and build many databases. It is a central component of the LAMP stack of the open-source web application software used to create websites. LAMP stands for Linux, Apache, MySQL, and PHP.

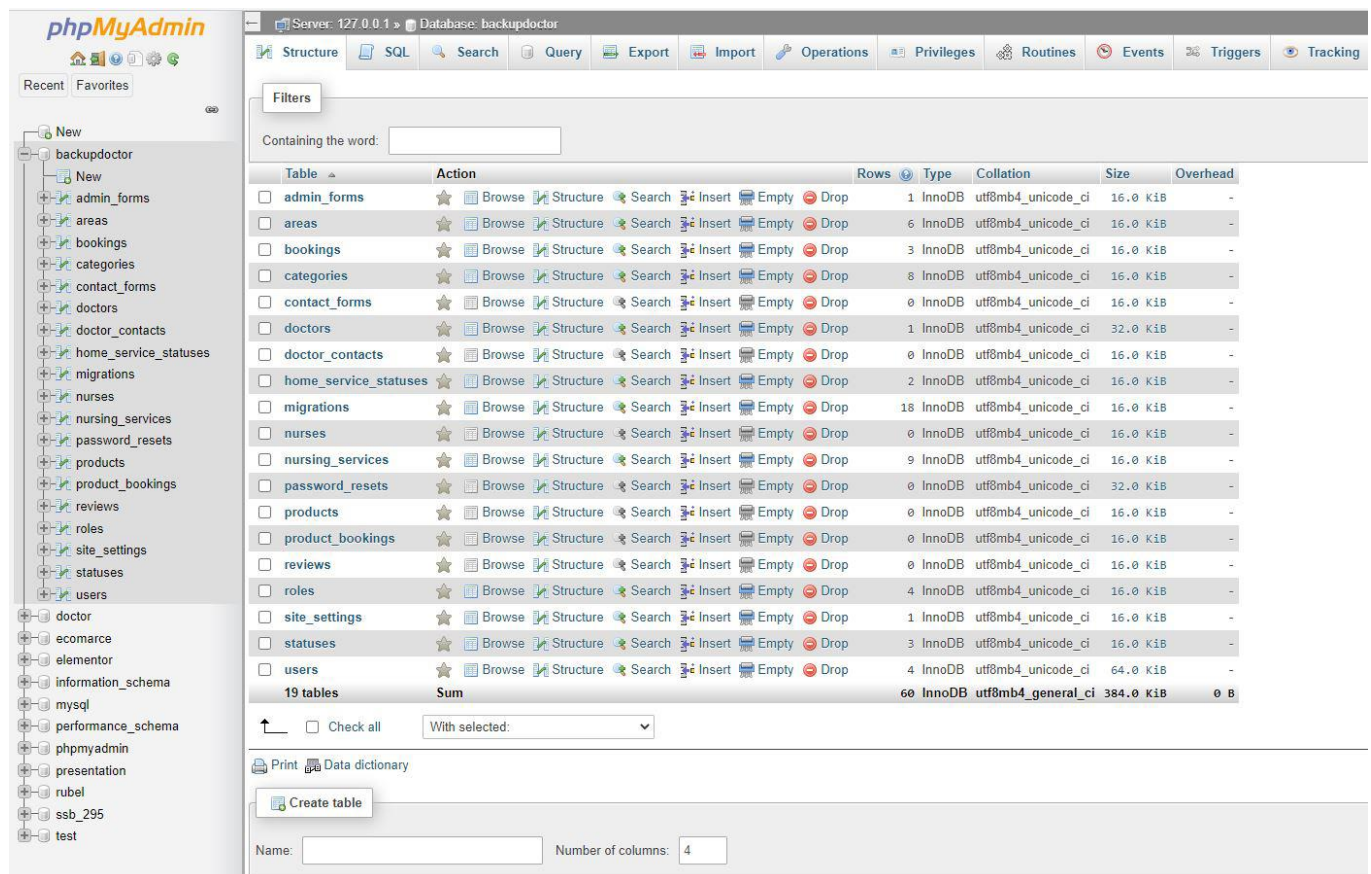


Figure 5.1: Database Implementation

5.2 Implementation of Front-end Design

Home page of “Amar Doctor” looks like this. A user needs to be log in to get access in the web site as well as for using.

The screenshot displays the homepage of the "Amar Doctor" website. At the top, there is a navigation menu with links for Home, Diagnostic Product, Doctor Search, Doctor at Home, Nursing Service, and Career. On the right side of the header, there is a contact number (01684398272) and buttons for LOGIN and REGISTER.

The main banner features a large image of a nurse attending to an elderly patient. A circular badge on the left of the banner indicates a "upto 20% Discount". To the right, the text "Nursing Care Home Service" is prominently displayed.

Below the banner, there is a section titled "Top deals and offers" with the subtitle "Hand-picked deals for a healthier you". This section contains a carousel of four promotional cards, each with a different discount percentage (15%, 20%, 15%, and 15%).

The next section is "Affordable full body health checkups" with the subtitle "Free home sample collection for all health checkups".

Following this is a section titled "3 steps for better health" which includes three sub-sections: "Get Health Check Up Book an Doctor Appointment", "Doctor Search at your Doorstep", and "Nursing Service at your Doorstep".

A testimonial box below contains the text: "Very easy to book,maintain history. Hassle free from older versions of booking appointment via telephone. Thanks Practo for making it simple. - Ha Pratik" and a five-star rating.

The footer is divided into three columns: "For Patients" (Login, Register, Dashboard, Search for Doctors, Doctor at Home, Nursing Service), "Career" (Doctor Login, Doctor Register, Nurse Login, Nurse Register), and "Contact Us" (Address: Basaboo,107/2/c patowary goll, Phone: 01684398272, Email: minhajshahir@gmail.com).

At the bottom left, there is a copyright notice: "© 2021 Doctor Appointment System. Developed By Minhaj - Ismail - Tanbir". At the bottom right, there are links for "Terms and Conditions" and "Policy".

Figure 5.2: Homepage of “Amar Doctor”.

These are the registration pages for “Amar Doctor” website.

The screenshot shows the 'Patient Register' page. At the top, there is a navigation menu with 'Home', 'Diagnostic Product', 'Doctor Search', 'Doctor at Home', 'Nursing Service', and 'Career'. On the right, there is a 'Contact' section with the phone number '01684398272' and 'LOGIN' and 'REGISTER' buttons. The main content area features an illustration of a doctor and a patient on the left, and a registration form on the right. The form is titled 'Patient Register' and includes a link 'Are you a Doctor?'. The form fields are: Name, Email, PIN Number, Username, Create Password, and Confirm Password. Below the form is a 'Signup' button and a link 'Already have an account?'. The footer contains a 'For Patients' section with links to Login, Register, Dashboard, Search for Doctors, Doctor at Home, and Nursing Service. A 'Career' section lists Doctor Login, Doctor Register, Nurse Login, and Nurse Register. The 'Contact Us' section provides the address 'Basaboo,107/2/c patowary gall', phone number '01684398272', and email 'minhajshishir@mail.com'. The footer also includes the copyright notice '© 2021 Doctor Appointment System. Developed By Minhaj - Ismail - Tanvir' and links for 'Terms and Conditions' and 'Policy'.

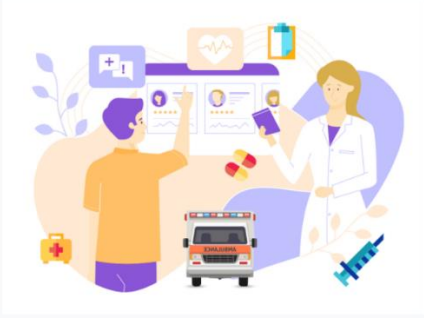
Figure 5.3: Registration page for “Patient”.

The screenshot shows the 'Nurse Register' page. At the top, there is a navigation menu with 'Home', 'Diagnostic Product', 'Doctor Search', 'Doctor at Home', 'Nursing Service', and 'Career'. On the right, there is a 'Contact' section with the phone number '01684398272' and 'LOGIN' and 'REGISTER' buttons. The main content area features an illustration of a doctor and a patient on the left, and a registration form on the right. The form is titled 'Nurse Register' and includes a link 'Not a Nurse?'. The form fields are: Name, User Name, E-mail Address, Mobile Number, Create Password, Nursing Registration Number, and Edu Degree. Below the form is a 'Signup' button and a link 'Already have an account?'. The footer contains a 'For Patients' section with links to Login, Register, Dashboard, Search for Doctors, Doctor at Home, and Nursing Service. A 'Career' section lists Doctor Login, Doctor Register, Nurse Login, and Nurse Register. The 'Contact Us' section provides the address 'Basaboo,107/2/c patowary gall', phone number '01684398272', and email 'minhajshishir@mail.com'. The footer also includes the copyright notice '© 2021 Doctor Appointment System. Developed By Minhaj - Ismail - Tanvir' and links for 'Terms and Conditions' and 'Policy'.

Figure 5.4: Registration page for “Nurse”.

[Home](#)
[Diagnostic Product](#)
[Doctor Search](#)
[Doctor at Home](#)
[Nursing Service](#)
[Career](#)

Contact: 01684398272
 [LOGIN](#)
[REGISTER](#)



Doctor Register [Not a Doctor? Are You User ?](#)

Name

User Name

E-mail Address

Mobile Number

Select Your Area
Dhanmandi

Select Your Category
ENT

Create Password


BMDC Registration Number

Profile Photo (1)
 No file chosen

Profile Card
 No file chosen

Already have an account?

[Signup](#)



GBoWGH3Y4vgUQDvpFMuo2qF6l

[f](#) [v](#)

For Patients

- » Login
- » Register
- » Dashboard
- » Search for Doctors
- » Doctor at Home
- » Nursing Service

Career

- » Doctor Login
- » Doctor Register
- » Nurse Login
- » Nurse Register

Contact Us

- » Basaboo,107/2/c patowary goli
- » 01684398272
- » minhajshishir@mail.com

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Figure 5.5: Registration page for “Doctor”.

This is the login page of “Amar Doctor”. Everyone have to enter valid email address and password for login . If user forget password, then here is an option to recover password.

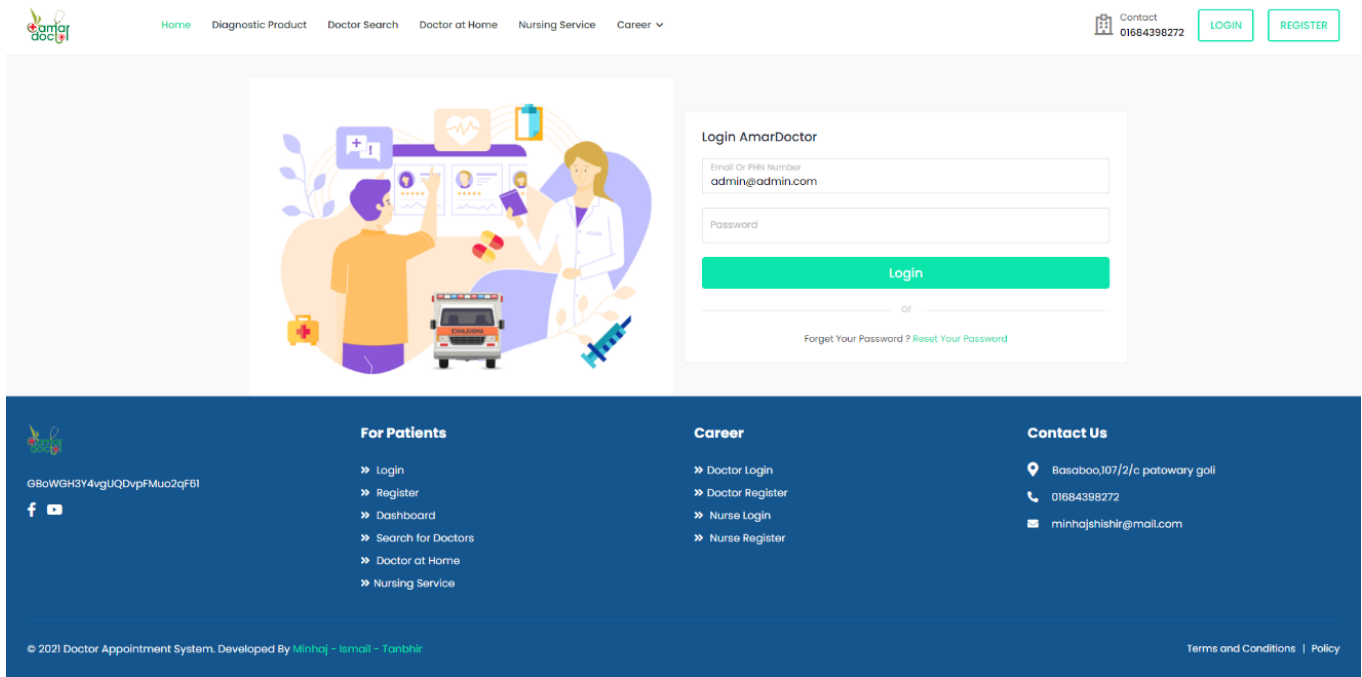


Figure 5.6: Login page of “Amar Doctor”

This is the patient dashboard of “Amar Doctor”. Here patient can find doctor, view appointment.

The screenshot displays the patient dashboard for 'Amar Doctor'. The interface includes a blue header with a search bar and a user profile dropdown. A sidebar on the left lists navigation options: 'MR User user', 'INTERNAL OPTION', 'Homepage', 'All Product', and 'Search Doctor'. The main content area features a greeting 'Hello Dear, MR User' and 'Your Username: user'. Below this are two tables: 'Doctor Booking Status Table' and 'Product Booking Status Table'. The doctor booking table lists three entries for 'MR User' with 'MR Doctor' in the 'ENT' department at 'Dhanmondi', with request dates of '5th May 2021' and statuses of 'Rejected', 'Pending', and 'Pending'. The product booking table is currently empty.

Doctor Booking Status Table					
Patient Name	Doctor Name	Department	Area	Req Date	Status
MR User	MR Doctor	ENT	Dhanmondi	5th May 2021	Rejected
MR User	MR Doctor	ENT	Dhanmondi	5th May 2021	Pending
MR User	MR Doctor	ENT	Dhanmondi	5th May 2021	Pending

Product Booking Status Table					
Product Name	Total Rate	Package Rate	Admin PHN Number	Req Date	Status

Figure 5.7: Patient Dashboard of “Amar Doctor”.

This is the doctor search option for patient. Patient can search doctor by area, name and department.

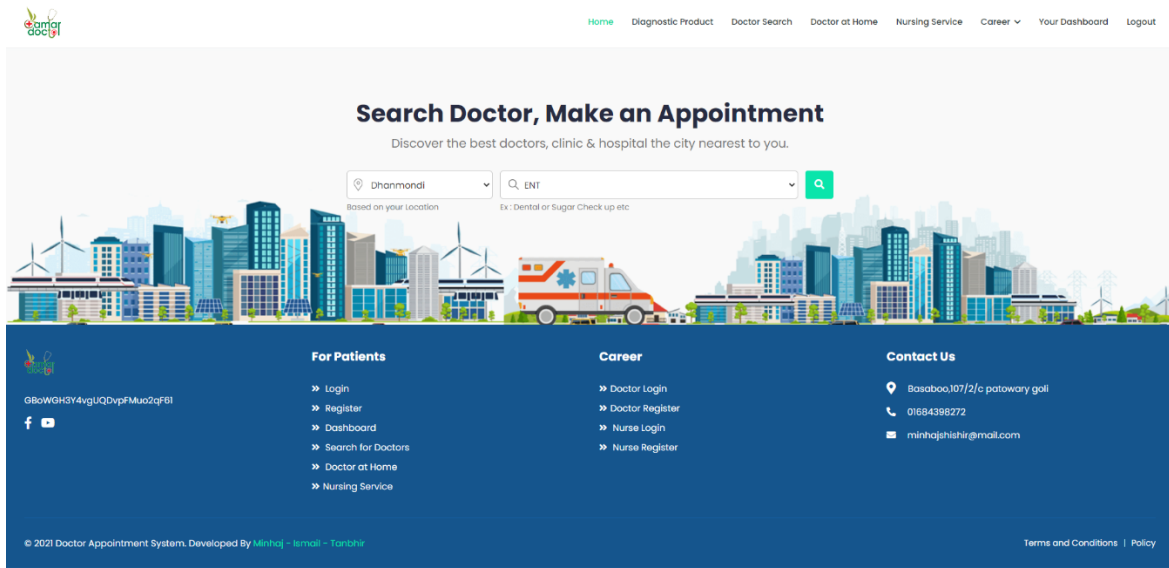


Figure 5.8: Search Doctor

Patient can see their appointment pending if doctor approved or not.

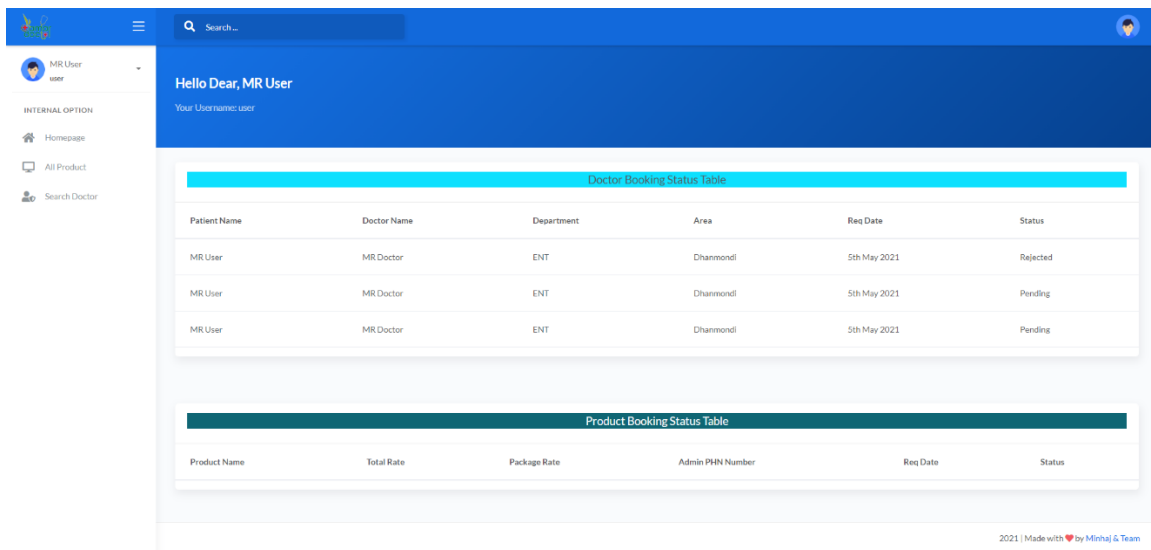


Figure 5.9: Pending Request

This is Doctor profile. Doctors can edit their information.

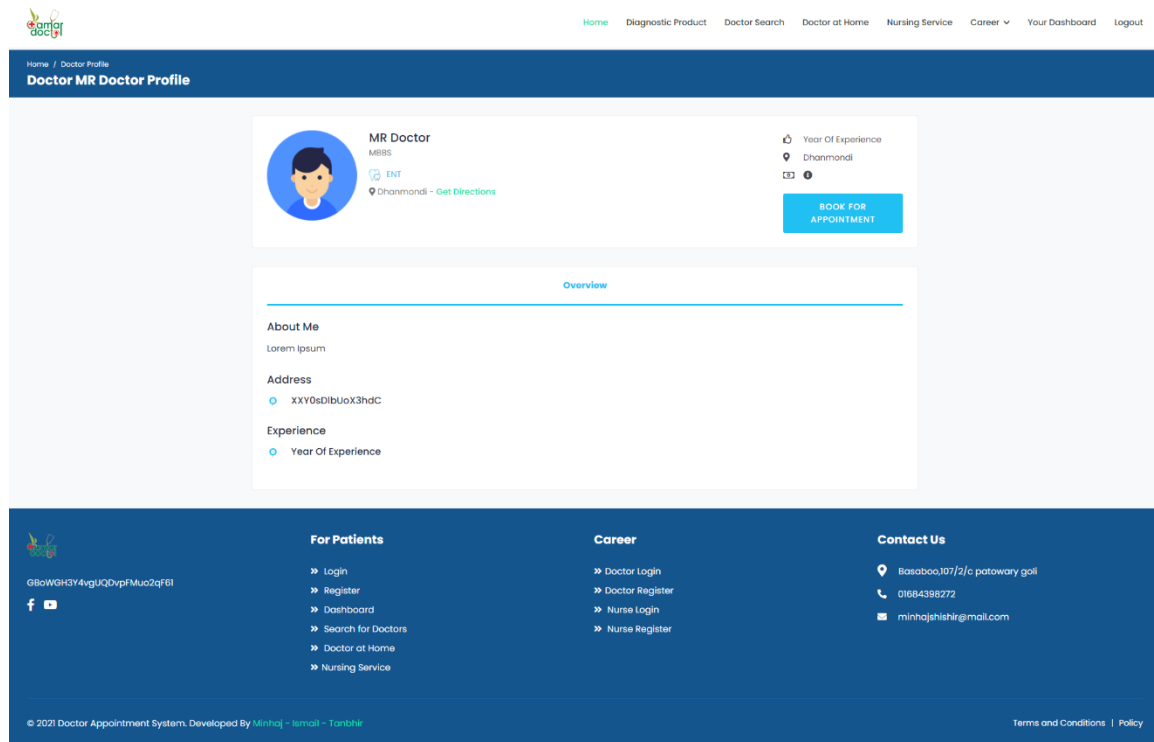


Figure 5.10: Doctor Profile

After admin approved pending request then cancel the approval at any emergency cases.

Appointment List							
Patient Name	Doctor Name	Category	Appointment date	User PHN No	Status	Action	Delete
MR User	MR Doctor	ENT	27th May 2021		Approve	Edit	Delete
MR User	MR Doctor	ENT	5th May 2021		Pending	Edit	Delete
MR User	MR Doctor	ENT	5th May 2021		Pending	Edit	Delete
MR User	MR Doctor	ENT	5th May 2021		Rejected	Edit	Delete

Figure 5.11: Approval and Cancellation by admin

Nurses can give many care at home

The screenshot shows a web form titled "Nursing Care (Home Service only)". The form is set against a dark blue background. It contains the following fields from top to bottom: "Your Name", "Your Email", "Your Ptn Number", a dropdown menu labeled "Select Any Service" with the text "Please Select Any Service ...", "Your Location / Address", and "Why You Need Nurse?". A bright green "Submit" button is located below the last field. The top navigation bar includes links for Home, Diagnostic Product, Doctor Search, Doctor at Home, Nursing Service, Career, Your Dashboard, and Logout. The footer is divided into three sections: "For Patients" with links to Login, Register, Dashboard, Search for Doctors, Doctor at Home, and Nursing Service; "Career" with links to Doctor Login, Doctor Register, Nurse Login, and Nurse Register; and "Contact Us" with location, phone number, and email information. Copyright and terms information are also present at the bottom.

Figure 5.12: Nursing Care (Home Service only)

5.3 Testing Implementation

The objective of this test is to evaluate the compliance of our system with the specified requirements. We have tried to protect this system. Any information that a user enters into our system must pass the test.

5.4 Test Results and Reports

Table 1: Registration and Login Test Case

SL No	Test case	Input	Conventional Outcome	Actual Output	Outcome
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		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	Test case	Input	Expected Result	Genuine Output	Outcome
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, Health sector

6.1 Impact on Society

An online appointment booking system can be of benefit to everyone. Many of us have seen the busy doctors waiting room, it will be a reminder of the patients and their assistants huddling around the receptionist. In many cases, tokens representing our queue number have been distributed.

But when an app manages the logistics, you save time for the patient because you can schedule medical appointments quickly and easily online. Therefore, it reduces no-show rates because patients are notified of upcoming appointments in advance and save doctor's time. Thanks to the notification of recently canceled visits, the working hours of the unused doctor are reduced again, while patients in need of an urgent consultation can do so faster.

The prevalence of medical dating app development also means that medical practices have the time and money to grow and thrive. This type of software can expand doctors' ability to gain more patients and experience. According to the Deloitte report, a mobile medical booking solution allows you to see 2 additional patients per day. As a result, it increases supplier profits by improving work efficiency and developing physician skills.

6.2 Impact on Health sector

Considered a benefit to all healthcare professionals, mobile health care app informs doctors of the patient's symptoms and condition. These apps can be designed to find uncomfortable symptoms and create a relationship. After the report, the doctor can make good decisions, including by offering prescriptions accessible through the app.

In a recent Great Call analysis, 93% of doctors choose mobile health apps to upgrade patient health, while 40% think they can cut clinic visits. Another analysis advice that most doctors (around 80%) use smartphone apps to provide patient care. Parallel cases demonstrate the concern of mobile healthcare applications. Those mobile applications can

be custom-built to treat each patient. Rural areas with fixed healthcare facilities nearby may use mobile health apps. If they use mobile applications, these areas can benefit from timely care. Routine hospital visits can be avoided collectively. Because doctors will monitor their patients' well-being via the smartphone app.

Chapter 7

Conclusion and Future Scope

7.1 Discussion and Conclusion

Doctor and patient appointment system is a genuine interesting topic to work on. After getting the job done, we faced many difficult tasks. The daily healthcare system has become an important part of our society. So, we decided to build this system. We have studied so many systems that they have shown us how to flourish our setup. We talked with people about what type of problem they are facing. People were happy to take this system as it brings them some cure in the latest age. Despite all that we have accomplished, we had some challenges in completing this project. This is a web-based online system, so in real life, both the doctor and the patient must follow the rules of use, otherwise, your goal will fail.

7.2 Scope of future development

The online system can always be edited. It develops day by day, getting better and better for people. It could be a revolutionary web application that could help the doctor-patient bond. We believe that we can improve this system in the future. Advanced features and user interface will be updated in the future. Our system is already easy to use, but we will try to make it easier to use in the future.

APPENDIX

Appendix A: Project Reflection

In our daily life, we are faced with many problems. Illness is one of the most common problems in a person's life. If anyone is sick and needs to see a doctor for a checkup, they should go to the hospital and wait for the doctor to be available. If people are sick, they have to see a doctor for a check-up, but they have to go to their room or to the hospital for an appointment. It is a long process and a waste of time. Sometimes people visit the doctor's room for a medical examination, but the doctor is not available for various reasons. This is the only way to know when people come to visit your places. He harasses people a lot. In addition, people need an ambulance service to take a patient to the hospital. People just need to go to hospitals or clinics to hire an ambulance, it is a time-consuming process. The daily health care system has become an important part of our society. That's why we decided to build this system.

Appendix B: Related Diagrams

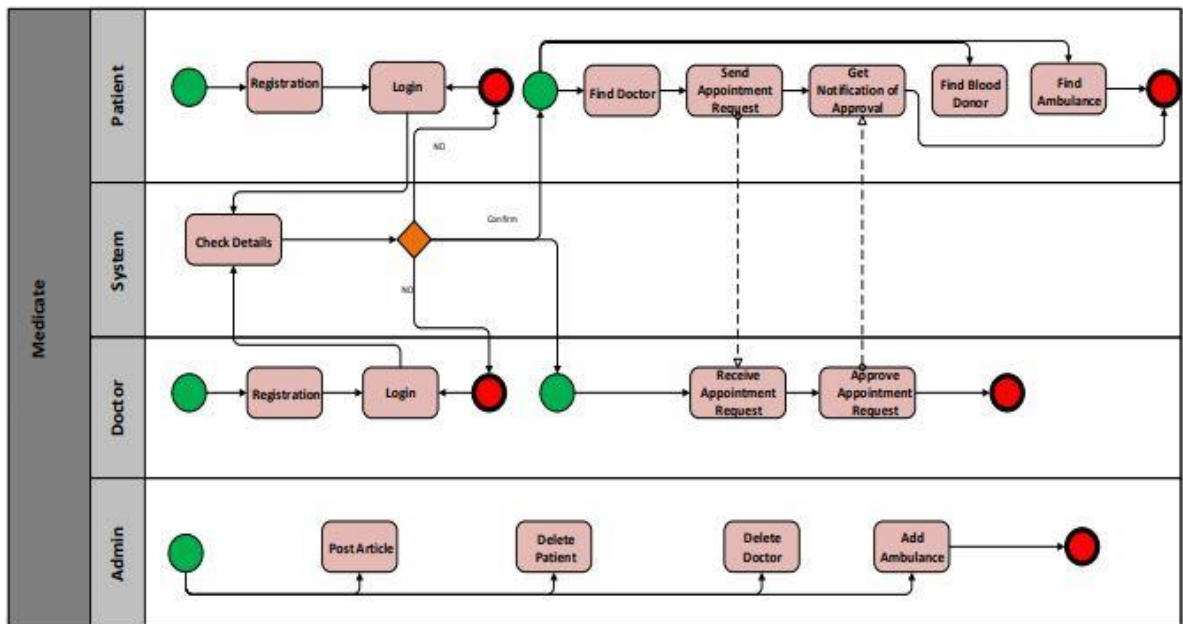


Figure A.1: Business Process Model

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Final Test

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