

"Health Care – A Client-side application developed in React.js for Online Prescription"

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APPROVAL

This **Project** titled "Health Care – A Client-side application developed in React.js for Online **Prescription**", submitted by **Ashfaq Mahmud**, 161-35-1428 to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc in Software Engineering and approved as to its style and contents.

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DECLARATION

I hereby declare that I have taken this project under the supervision of Md. Mushfiqur Rahman, Lecturer, Department of Software Engineering, Daffodil International University, I also declare that neither this project nor any part of this has been submitted elsewhere for award of any degree.

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ABSTRACT

This project entitled "**Health Care**" is a web based application to communicate between doctor & patient. Health Care is the practice of get a prescription between a doctor & a patient. With this thought I made this project of Health Care. Here a user who is a doctor can suggest medicine for a patient. And another user who is a patient can ask about their problems to a doctor. Anyone can check his/her BMI. It will save money. It can be a helpful system for people.

I used React.JS for client side, for style bootstrap to create my project.

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Chapter-1

1. Introduction

Health Care, it is basically a web system. This system is for all people. In our project, I will try to make a system where people can take an online prescription from doctors. Here patients can registrar & Login. They can register so that they can get a solution from any doctors. And doctors can also registrar & Login. They can provide a solution for patients so that the patients can relief from their problems. Basically I will try to do this and next I have more plans for our project.

Users ought to counsel this record and its corrections as the main wellspring of prerequisites for the undertaking. They ought not to think about any necessities articulations, composed or verbal as substantial until they show up in this record or its correction.

1.1 Overview

This web system can utilize everybody the individuals who are enrolled. Individuals can register and login; at that point they can record their issues in the system and submit it. At that point a specialist will restore a remedy to the patient. With the goal that the patients get arrangements.

1.2 Purpose & Scope

This web system can use everyone those who are registered. People can registrar & login, then they can register in the system and submit it. Then they will go to a doctor & doctor will return a prescription to the patient. So that the patients get solutions. Using this system people is helped. Govt. can also use this system that they can understand about the records of problems & can analysis by using our system. They can also know about the drugs. Which drugs are needed for the disease? They can understand the problems of the disease and make new good quality drugs.

There are some issues also like, patients can't understand doctors hand-writing. So this system will help to understand medicines name easily.

Basically our purpose of building the system is to make a platform for all types of patients & doctors for free treatment.

1.2.2 Benefits & Beneficiaries

The benefits of this system are people can easily get solutions of their problems. They need not go anywhere for prescription. They can ask any problems & get medicines name for their problems. Doctors need not to use anything to write prescription. They can easily write down their prescription & they can also know about medicines. Government can also take benefits from this system. They can analysis about the disease and can make new good quality drugs. So that people can relief from diseases & can lead a better life.

1.2.3 Goal

Our goal is to provide free prescription for patients. That they can easily get treatment from Anywhere & any place. There are some issues also like, patients can't understand doctors Hand-writing. So this system will help to understand medicines name easily. I have a plan to explore this project more & make it reliable. Doctors need not to use anything to write prescription. They can easily write down their prescription & they can also know about medicines. So that my users feel free to use the system.

1.3 Stakeholders

Basically those who are using our web system they are our stakeholders. Doctors, Patients & Admin are stakeholders.

1.4 Proposed Solution

I proposed for our Health Care system that I will try to make a Prescription part so that patients can easily get their treatments & I have done this part. And I tried to make a BMI calculator in our system so that anyone check their BMI. Next I will try to make an Appointment system so that patients can contact with doctors, can get serials to meet up with doctors.

1.5 Project Schedule

Though our project is a big project so this project will take a time. But I am trying to finish one part from the whole system for our Final Defense. So I used 5 months to make our system. Here's the Gantt Chart. So that I can easily find out when I have finished our work.

1.5.1 Finding Idea Proposal:

Serial	Work Description	Start Day	End Day	Total Day
1	Idea Finding With Supervisor	01-09-2019	04-09-2019	3
2	Feasibility study With Supervisor	05-09-2019	07-09-2019	2
3	Feature Discussion With Supervisor	08-09-2019	10-09-2019	2
4	Work Flow Maintenance	11-09-2019	16-09-2019	5
5	SDLC Selection	17-09-2019	19-09-2019	2

1.5.2 Requirements Gathering:

Serial	Work Description	Start Day	End Day	Total Day
1	System Flow sketch	20-09-2019	28-09-2019	8
2	Requirement gathering for proposed system	29-09-2019	05-10-2019	7
3	Requirement Collection	06-10-2019	08-10-2019	2
4	SRS	09-10-2019	11-10-2019	2
5	All requirement and Information	12-10-2019	16-10-2019	4

1.5.3 Logical System Design:

Serial	Work Description	Start Day	End Day	Total Day
1	Use case Diagram Design	17-10-2019	18-10-2019	1
2	Activity Diagram	19-10-2019	20-10-2019	1
3	Schema Diagram	21-10-2019	22-10-2019	1
4	Class Diagram	23-10-2019	24-10-2019	1

1.5.4 Development Phase:

Serial	Work Description	Start Day	End Day	Total Day
1	Build User Module	25-10-2019	01-11-2019	7
2	Build Prescription Module	02-11-2019	09-11-2019	7
3	Build Admin Module	10-11-2019	18-11-2019	8
4	Database Integration	19-11-2019	21-11-2019	2
5	Live Streaming Implementation	22-11-2019	25-11-2019	3
6	Refactoring Code	26-11-2019	05-12-2019	10
7	Intend All Code	06-12-2019	11-12-2019	5

1.6 Gantt Chart

951 - 2			Aug			Sept				Oct				Nov				Dec				
W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4	W1	W2	W3	W4
			Plani	ning																		
				Requ	ireme	ent Ga	therin	ng														
					UX E	esign)																
							Desig	gn De	velop	ment												
								Cont	ent Ci	eatio	1											
									Codi	ng												
								7						Docu	iment	ation						
																QA						
																	Bug	Fixes				
																		Final	Testir	ng		
																			Relea	ase		

Figure 1.1: Grant Chart

1.7 Release Plan / Milestone

Release plan-1: I will try to release our system at 14 December 2019.

Because our system is not a small project. I can't finish it within a short time. So I will update it & release the update version in next time. In our next release date I will try to use an Appointment system & will try to make the system more reliable

Chapter-2

2. Software Requirement Specification

2.1 Functional & Non Functional Requirement List

Functional Requirements List:

Before identification of the requirements I needed the comprehensive engagement and lighting quick coordination with the stakeholders. This accelerates the entire requirements management process by orchestrating the flow of information and processes across different team members and stakeholders. Again, this is combined with hybrid agile and waterfall development methodologies and tools. Flexible workflows and automatic notifications streamline communication, review, and approval of requirements across stakeholders, while common metrics and dashboards ensure everyone is on the same page. So, the listed requirements go with all the previous processes.

2.1.1 Registration:

Here how-to registration.

Requirement	Requirement						
No.							
R-1	Define Full name (User name).						
R-2	Define E-mail address.						
R-3	Define Password (Strong)						
R-4	Attach Submit button.						
R-5	Check the mail to verify user account.						

2.1.2 Login:

Here, the requirements are based on the task of login system by the users including administrator and passenger.

Requirement	Requirement
No.	
L-1	While login match the username with user type
L-2	User will get the functionalities of his/her type
L-3	Login time should be stored in the log file

2.1.3 Admin Profile:

Here how to manage admin profile.

Requirement	Requirement						
No.							
A-1	Admin will login using email & password						
A-2	Admin will add medicines name						
A-3	Admin can add Generic & Brand name of medicines.						

2.1.4 Add Information:

Here how to add information.

Requirement	Requirement
No.	

Al-1	Doctor & Patient both can add their personal information.
AI-2	Doctors need to add their educational information.
AI-3	Doctors need to add their specialty information.

2.1.5 Check Information:

Requirement	Requirement						
No.							
CI-1	Patient can check their prescription what doctor suggest them.						
CI-2	Doctors can check their information & can add edit.						
CI-3	Then all update is saving in the database						

Non-Functional Requirements List:

- 1) Use valid E-mail address.
- 2) Use of Strong password.3) Use valid Contact Number.
- 4) Don't use any negative values if it's not necessary. (Like: Don't use negative values for age, mobile number, Visiting Number etc.)

2.2 Data Requirement

Data requirements refers those data which are needed to build the system model. For my project I need to focus on some points such as:

- 1) Doctor Personal Information.
- 2) Patient Personal Information.
- 3) Drugs Information.4) Prescription Information.

2.3 Performance Requirement

Server software does not require any special hardware other than the minimum hardware required for running enterprise OS. Extra disk storage will be required for archives and electronic documents. Increases of memory enables efficient query processing, which is required for quick bibliographic search. Minimum processors 1.0 Ghz, at least 4 GB RAM and 200 GB hard disk is recommended for the server. Client machine with recommended hardware required for desktop operating system and web browser.

2.4 Dependability Requirement

2.4.1 Reliability Requirement

Reliability is an important non-functional requirement for most software products so a software requirements specification (SRS) should contain a reliability requirement, and most do.

Software reliability can be a more difficult concept to grasp. A software product will fail under certain conditions, with certain inputs, and given the same inputs and conditions will fail every time until the cause of the failure is corrected. So, the reliability of a software product is more about the random discovery of faults resulting from various inputs with the system in various states. Although for small and simple systems it may be theoretically possible to test every combination of states and inputs, for a system of any size and complexity this is not feasible. The random nature of the fault discovery process means I must use probabilities when I refer to software reliability requirements and testing.

So I tried to make our software more reliable so that users can easily use our system & get better service from us.

2.5 Maintainability & Supportability Requirement

At least one backup server with same configuration as in main server is also recommended for fault tolerance and better performance. Separate storage (with backup) for database, electronic document, and manuscript is also recommended. Multiple computing nodes with the storage are required for high availability and to enhance the performance of the application. Again, after a certain period the preliminary manuscript files and other files related with that can be deleted manually from the database to increase the performance.

2.6 Security Requirement

Each time there is a security violation. For this reason when user will register, user will receive a mail & have verify this for login. Otherwise user can't login to the main option.

2.7 Operational & Environmental Requirement

The operational requirement definition process includes the following activities:

- 1) Identify stakeholders those who will or have interest in our system. So mainly our stakeholders are Doctors & patients. They should have Register & Login for their other activities.
- 2) Establish measure of effectiveness and suitability, so that users can easily access & can use our system.

A system reliability is dependent upon a stable environment. The design of the environmental control system for your data center must ensure that each system can operate reliably while remaining within the range of its operating specifications. So I tried to make our systems environment more reliable so that users can easily access to the system without any delay.

Chapter 3: System Analysis

3.1 Use Case Diagram for Prescription

Prescription

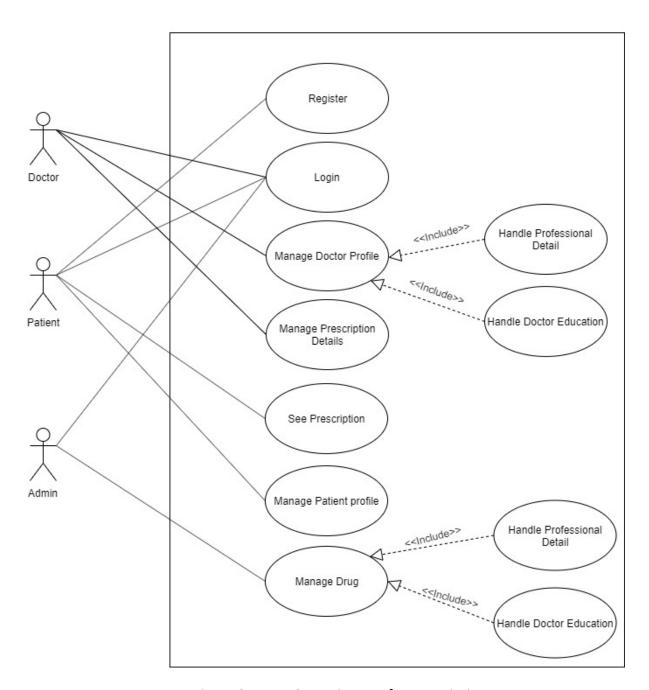


Figure 3.1: Use Case Diagram for Prescription

3.2 Use Case Description

3.2.1 Use Case Description for Login

Use Case No. 1
Use Case Name Login

Actor Doctor, Patient and Admin

Description Allowing Doctor, Patient and Admin to login to the system..

Precondition Doctor, Patient and Admin should remain in the login page. Required

registration and email verification.

Trigger Click the "Login" Button

Flow of Events

1. Two text fields to give input of the Email and password

respectively.

2. Write the username and password on that field.

3. Then Click the Login button.

Post Condition Doctor, Patient and Admin are logged into the system at a different

time.

3.2.2 Use Case Description for Register

Use Case No. 2

Use Case Name Register
Actor Doctor

Description Allowing Doctor and Patient to registration to the system.

Precondition Doctor and Patient should remain in the registration page. Required

username, email and password.

Trigger Click the "Submit" Button

Flow of Events 1. Three text fields to give input of the username, email and

password respectively.

2. Write the username, email and password on that field.

3. Then Click the submit button.

4. System will sends email on your provided Gmail address.

5. Then doctor click the confirm link.

6. Redirect to Login page.

Post Condition Doctor and Patient are registered into the system at a different time.

3.2.3 Use Case Description for Manage Doctor Profile

Use Case No. 3

Use Case Name Manage Doctor Profile

Actor Doctor

Description Allowing Doctor to manage his personal information to the system.

Doctor can do insert, edit, delete and show data.

Precondition Doctor should remain in the profile page. Required full name,

gender, Date of birth, mobile and additional email.

Trigger Click the "Insert, Update, Delete and Show" Button

Flow of Events 1. Five text fields to give input of the full name, gender, Date of

birth, mobile and additional email respectively.

2. Write the full name, gender, Date of birth, mobile and additional email on that field.

3. Then Click the submit button.

4. When edit your data click edit button

5. Re-enter your data into the text fields which is right.

6. Then Click the update button.

7. When delete your data then click delete button.

8. When show your data then click "Back to List" button.

Post Condition Doctor successfully can doing insert, update, delete and show his personal

data into the system.

3.2.3.1 Use Case Description for Handle Professional details

Use Case No. 3.1

Use Case Name Handle Professional details

Actor Doctor

Description Allowing Doctor to handle his Professional information to the

system. Doctor can do insert, edit, delete and show data.

Precondition Doctor should remain in the Professional details page. Required

specialization.

Trigger Click the "Insert, Update, Delete and Back to List" Button

Flow of Events

1. One text field and one dropdown list to give input of the doctor

name and specialization respectively.

2. Write the doctor name and specialization on that field.

3. Then Click the submit button.

4. When edit your data click edit button.

5. Re-enter your data into the text fields which is right.

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6. Then Click the update button.

7. When delete your data then click delete button.

8. When show your data then click "Back to List" button.

Post Condition Doctor successfully can doing insert, update, delete and show his

Professional data into the system.

3.2.3.2 Use Case Description for Handle Doctor Education

Use Case No. 3.2

Use Case Name Handle Doctor Education

Actor Doctor

Description Allowing Doctor to handle his educational information to the system.

Doctor can do insert, edit, delete and show data.

Precondition Doctor should remain in the docEducation page. Required Institute

Name, Degree and Passing Year.

Trigger Click the "Insert, Update, Delete and Back to List" Button

Flow of Events 1. Three text fields and one dropdown list to give input of the

doctor name, Institute Name, Degree and Passing Year

respectively.

2. Write the doctor name, Institute Name, Degree and Passing

Year on that field.

3. Then Click the submit button.

4. When edit your data click edit button.

5. Re-enter your data into the text fields which is right.

6. Then Click the update button.

7. When delete your data then click delete button.

8. When show your data then click "Back to List" button.

Post Condition Doctor successfully can doing insert, update, delete and show his

educational data into the system.

3.2.4 Use Case Description for Manage Prescription Detail

Use Case No.

Use Case Name Manage Prescription Detail

Actor Doctor

Description Allowing Doctor to manage his prescription detail to the system.

Doctor can do insert, edit, delete and show data.

Precondition Doctor should remain in the prescription detail page. Required Doze

and Duration.

Trigger Click the "Insert, Update, Delete and Back to List" Button

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Flow of Events

- 1. Two text fields and two dropdown lists to give input of the prescription id, drug id, doze and duration respectively.
- 2. Write prescription id, drug id, doze and duration on that field.
- 3. Then Click the submit button.
- 4. When edit your data click edit button.
- 5. Re-enter your data into the text fields which is right.
- 6. Then Click the update button.
- 7. When delete your data then click delete button.
- 8. When show your data then click "Back to List" button.

Post Condition

Doctor successfully can doing insert, update, delete and show his Prescription Detail data into the system.

3.2.5 Use Case Description for Make Prescription

Use Case No.

L G N

Use Case Name

Make Prescription

Actor

Doctor

5

Description

Allowing Doctor to make patient prescription to the system. Doctor

can do insert, edit, delete and show data.

Precondition

Doctor should remain in the prescription page. Required Date, Blood presser, Temperature, Weight, Visit no, Next Date and Indication.

Trigger Flow of Events Click the "Insert, Update, Delete and Back to List" Button

- Seven text fields and two dropdown lists to give input of the Patient name, Doctor name, Date, Blood presser, Temperature, Weight, Visit no, Next Date and Indication respectively.
- 2. Write Patient name, Doctor Name, Date, Blood presser, Temperature, Weight, Visit no, Next Date and Indication on that field.
- 3. Then Click the submit button.
- 4. When edit your data click edit button.
- 5. Re-enter your data into the text fields which is right.
- 6. Then Click the update button.
- 7. When delete your data then click delete button.
- 8. When show your data then click "Back to List" button.

Post Condition

Doctor successfully can doing insert, update, delete and show his Prescription data into the system.

3.2.6 Use Case Description for Manage Patient Profile

6

Use Case No.

Use Case Name Manage Patient Profile

Actor Patient

Flow of Events

Description Allowing Patient to manage his personal information to the system.

Patient can do insert, edit, delete and show data.

Precondition Patient should remain in the profile page. Required full name,

gender, Date of birth, mobile and additional email.

Trigger Click the "Insert, Update, Delete and Show" Button

1. Eight text fields to give input of the Full Name, gender, Age, Height, Weight, Is Married, mobile and additional email respectively.

- 2. Write the Full Name, gender, Age, Height, Weight, Is Married, mobile and additional email on that field.
- 3. Then Click the submit button.
- 4. When edit your data click edit button
- 5. Re-enter your data into the text fields which is right.
- 6. Then Click the update button.
- 7. When delete your data then click delete button.
- 8. When show your data then click "Back to List" button.

Post Condition Patient successfully can doing insert, update, delete and show his

personal data into the system.

3.2.7 Use Case Description for Manage Drug

Use Case No. 7

Use Case Name Manage Drug

Actor Admin

Description Allowing Admin to manage Drug information to the system. Admin

can do insert, edit, delete and show data.

Precondition Admin should remain in the Drug page. Required Strength and

Type.

Trigger Click the "Insert, Update, Delete and Back to List" Button

Flow of Events 1. Two text fields and two dropdown lists to give input of the

Generic Name, Brand Name, Strength and Type

respectively.

2. Write the Generic Name, Brand Name, Strength and Type on

that field.

3. Then Click the submit button.

- 4. When edit your data click edit button.
- 5. Re-enter your data into the text fields which is right.
- 6. Then Click the update button.
- 7. When delete your data then click delete button.
- 8. When show your data then click "Back to List" button.

Post Condition Admin successfully can doing insert, update, delete and show drug data

into the system.

3.2.7.1 Use Case Description for Handle Brand

Use Case No. 7.1

Use Case Name Handle Brand

Actor Admin

Description Allowing Admin to handle brand information to the system. Admin

can do insert, edit, delete and show data.

Precondition Admin should remain in the brand page. Required Brand Name.

Trigger Click the "Insert, Update, Delete and Back to List" Button

Flow of Events 1. One text field to give input of the brand name respectively.

2. Write the Brand Name on that field.

3. Then Click the submit button.

4. When edit your data click edit button.

5. Re-enter your data into the text fields which is right.

6. Then Click the update button.

7. When delete your data then click delete button.

8. When show your data then click "Back to List" button.

Post Condition Admin successfully can do insert, update, delete and show brand data into

the system.

3.2.7.2 Use Case Description for Handle Generic

Use Case No. 7.2

Use Case Name Handle Generic

Actor Admin

Description Allowing Admin to handle generic information to the system. Admin

can do insert, edit, delete and show data.

Precondition Admin should remain in the generic page. Required Generic Name.

Trigger Click the "Insert, Update, Delete and Back to List" Button

Flow of Events 1. One text field to give input of the generic name respectively.

2. Write the generic name on that field.

3. Then Click the submit button.

4. When edit your data click edit button.

5. Re-enter your data into the text fields which is right.

6. Then Click the update button.

7. When delete your data then click delete button.

8. When show your data then click "Back to List" button.

Post Condition Admin successfully can do insert, update, delete and show generic data into the system.

3.3 Activity Diagram

3.3.1 Activity Diagram for Login and Register

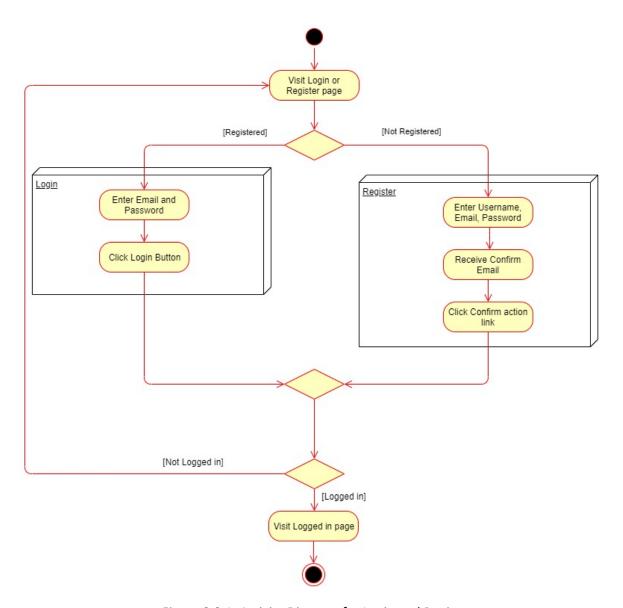


Figure 3.3.1: Activity Diagram for Login and Register

3.3.2 Activity Diagram for Manage Doctor Profile

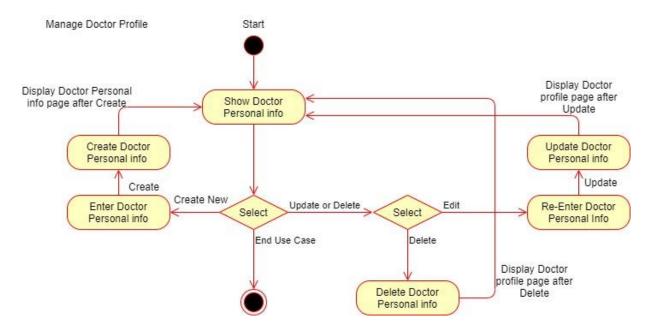


Figure 3.3.2: Activity Diagram for Manage Doctor Profile

3.3.3 Activity Diagram for Handle Professional details

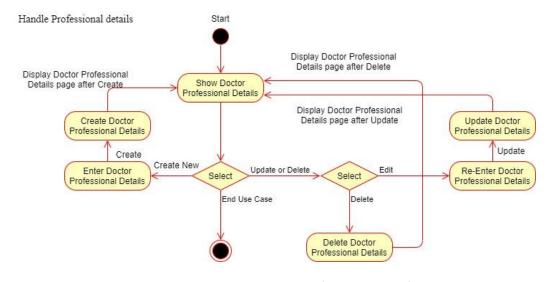


Figure 3.3.3: Activity Diagram for Handle Professional details

© Daffodil International University

3.3.4 Activity Diagram for Handle Doctor Education

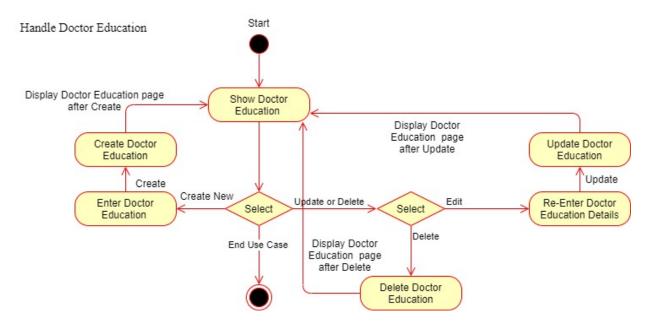


Figure 3.3.4: Activity Diagram for Handle Doctor Education

3.3.5 Activity Diagram for Manage Prescription Detail

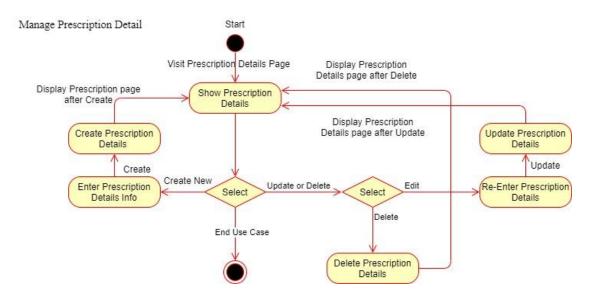


Figure 3.3.5: Activity Diagram for Manage Prescription Detail

3.3.6 Activity Diagram for See Prescription

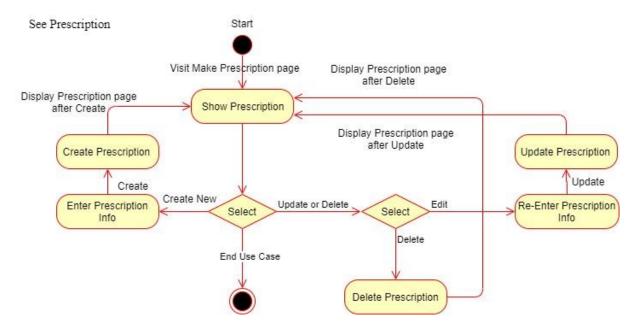


Figure 3.3.6: Activity Diagram for See Prescription

3.3.7 Activity Diagram for Manage Patient Profile

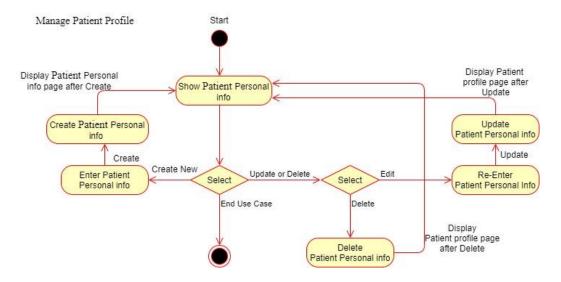


Figure 3.3.7: Activity Diagram for Manage Patient Profile

3.3.8 Activity Diagram for Manage Drug

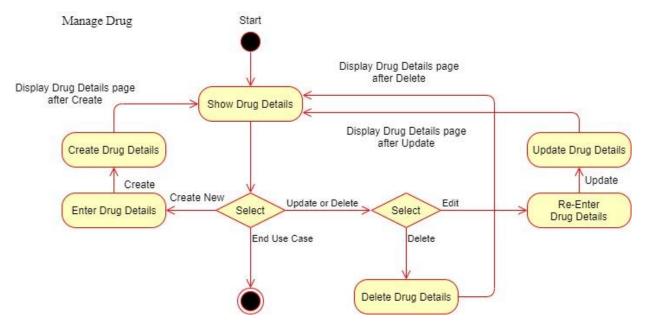


Figure 3.3.8: Activity Diagram for Manage Drug

3.3.9 Activity Diagram for Handle Brand

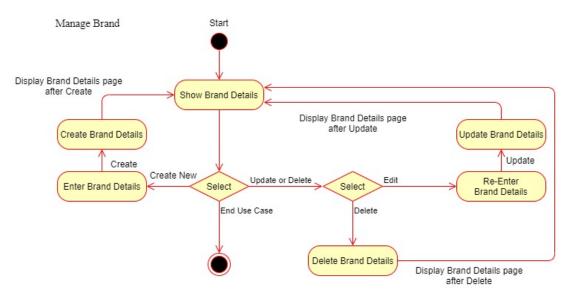


Figure 3.3.9: Activity Diagram for Handle Brand

3.3.10 Activity Diagram for Handle Generic

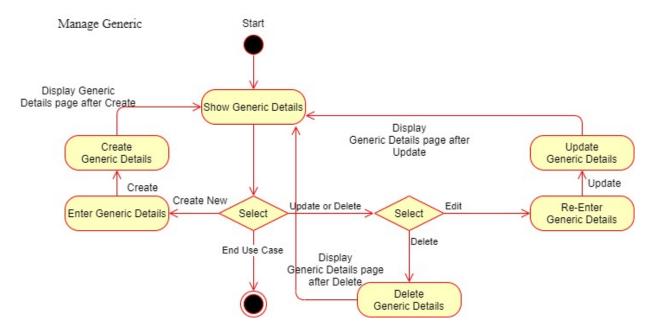


Figure 3.3.10: Activity Diagram for Handle Generic

Chapter 4: System Design Specification

4.1 Sequence Diagram

Login

4.1.1 Sequence Diagram for Login

Doctor, Patient, Admin

Enter Login Data
Click Login Button

CheckValidUser()

Checking Login Data

Return Result

AfterLogin()

return

Return Dashboard page

SiteUser
DBmodel

Checking Login Data

Search Database

Figure 4.1.1: Sequence Diagram for Login

4.1.2 Sequence Diagram for Register

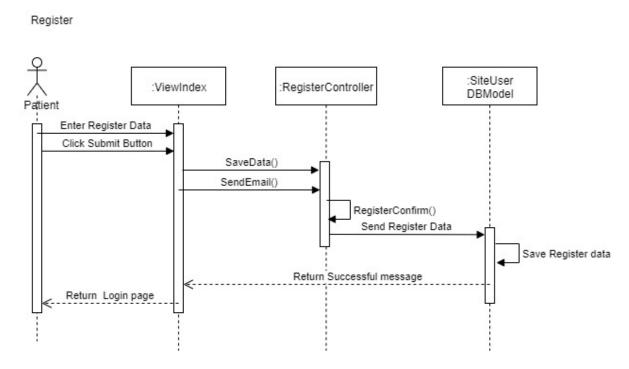


Figure 4.1.2: Sequence Diagram for Register

4.1.3 Sequence Diagram for Manage Doctor Profile

Manage Doctor Profile

:Doctor_P :Doctor_P :View Controller DBmodel Enter Doctor Personal data Click Insert Button addDoctor() AddDoctor_P() SaveChanges() Return Successful Msg Show Doctor Personal data Return Doctor Personal list page, Click Edit Button getdoctor_pdetails() displayDoctor_P() Return Doctor personal data UpdateView Return Re-Enter Doctor personal data Click Update Button UpdateRecord Put() SaveChanges() Updated Return Updated Details Return Doctor personal list page Click Delete Button Delete() DeleteRecord SaveChanges() Deteted Delete Success Msg Return Doctor personal list page,

Figure 4.1.3: Sequence Diagram for Manage Doctor Profile

4.1.4 Sequence Diagram for Handle Professional Details

Handle Professional details

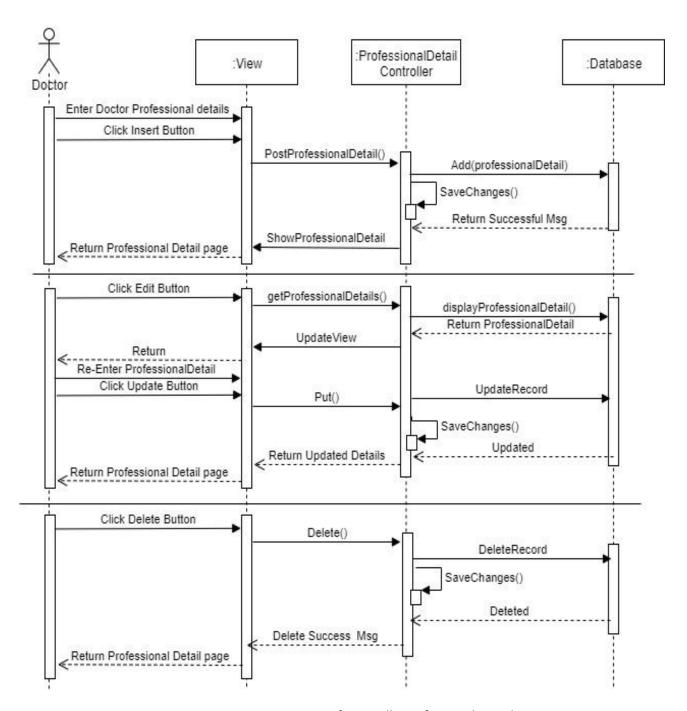


Figure 4.1.4: Sequence Diagram for Handle Professional Details

4.1.5 Sequence Diagram for Handle Doctor Education

Handle Doctor Education

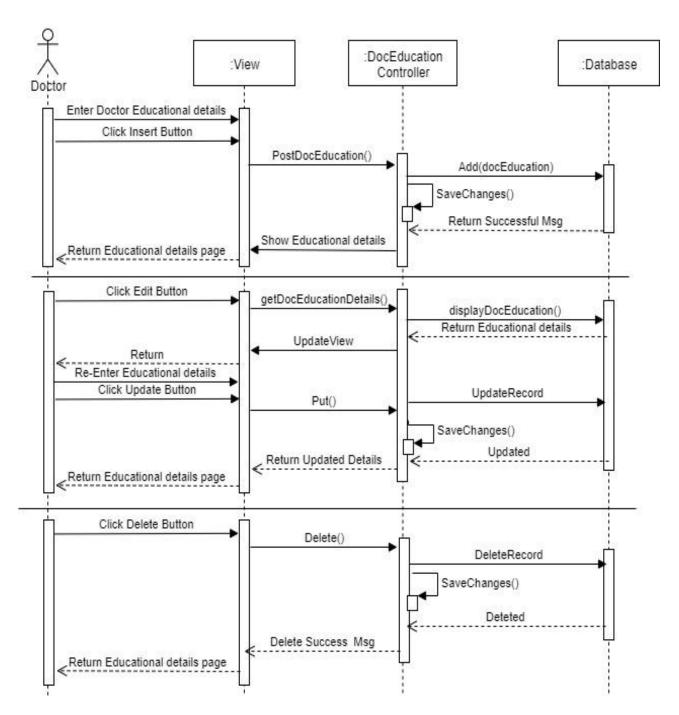


Figure 4.1.5: Sequence Diagram for Handle Doctor Education

4.1.6 Sequence Diagram for Manage Prescription Detail

Manage Prescription Detail

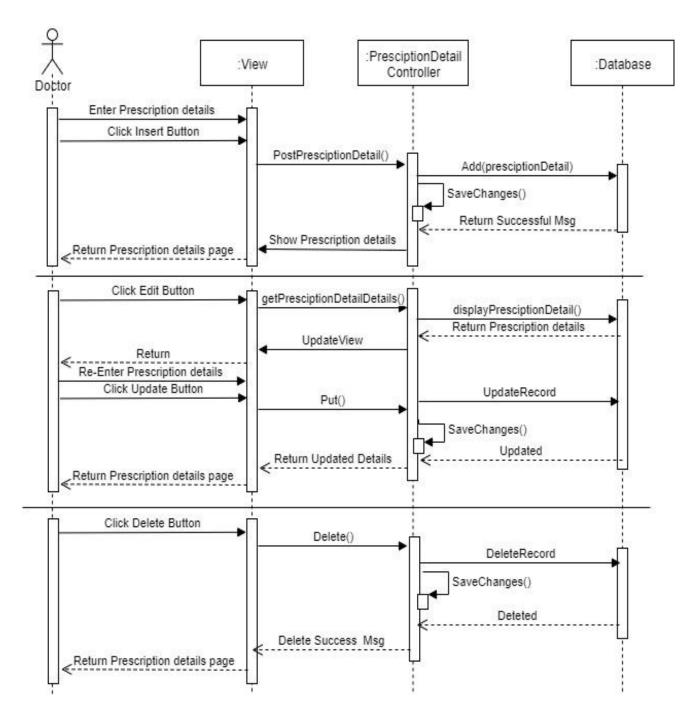


Figure 4.1.6: Sequence Diagram for Manage Prescription Detail

4.1.7 Sequence Diagram for Manage Patient Profile

Manage Patient Profile

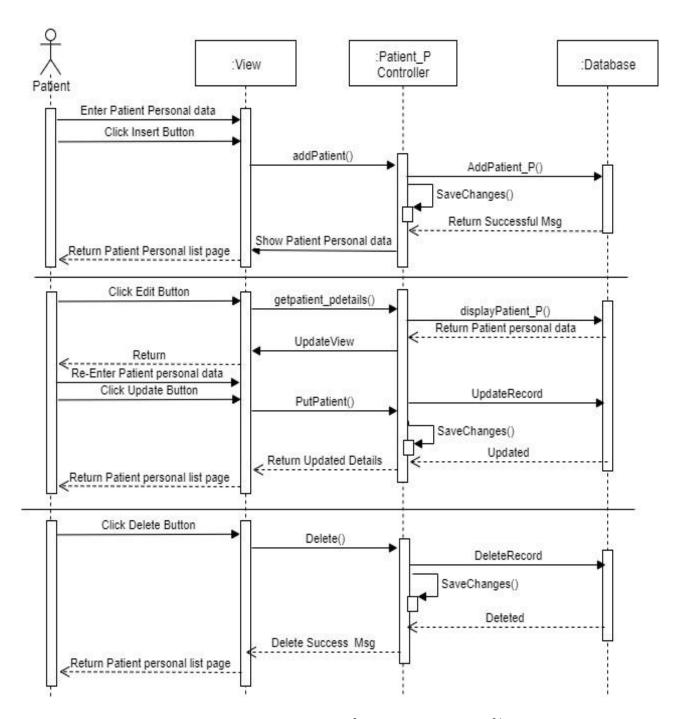


Figure 4.1.7: Sequence Diagram for Manage Patient Profile

4.1.8 Sequence Diagram for Manage Drug

Manage Drug

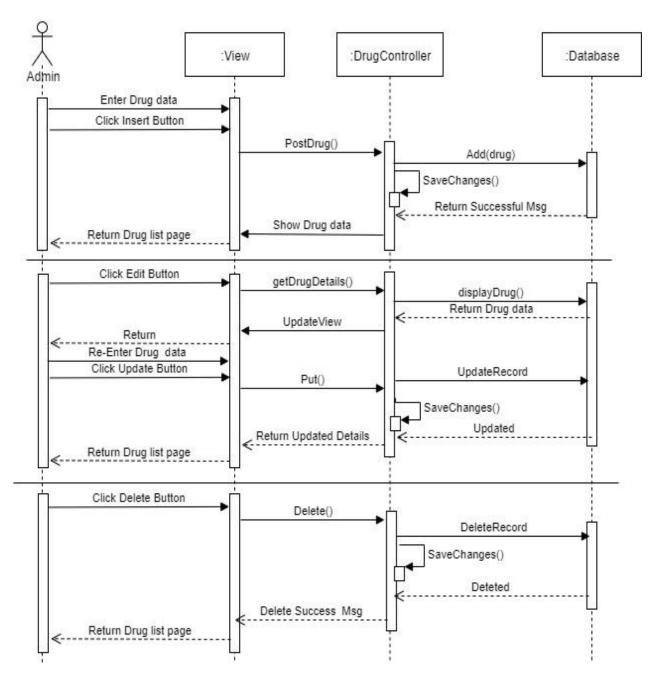


Figure 4.1.8: Sequence Diagram for Manage Drug

4.1.9 Sequence Diagram for Handle Brand

Handle Brand

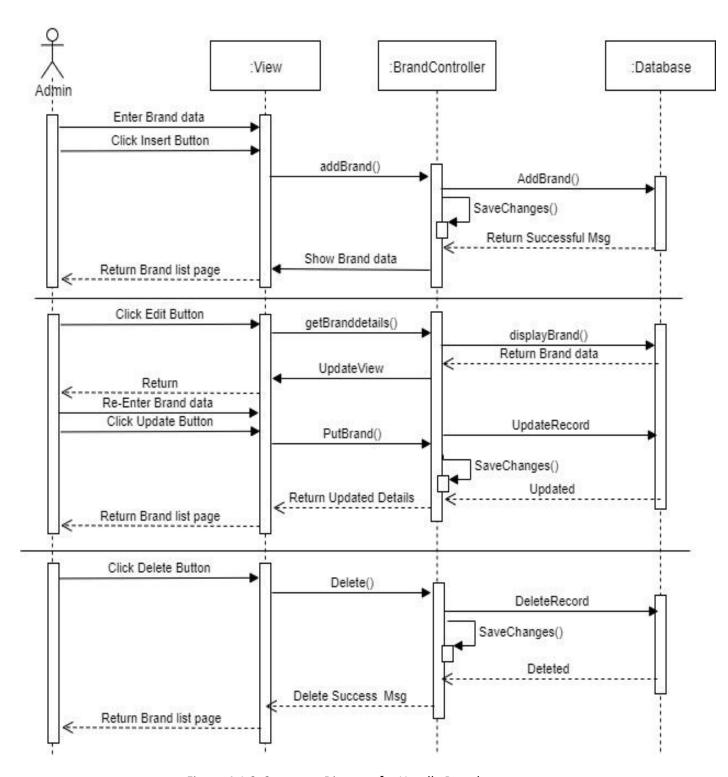


Figure 4.1.9: Sequence Diagram for Handle Brand

4.1.10 Sequence Diagram for Handle Generic

Handle Generic

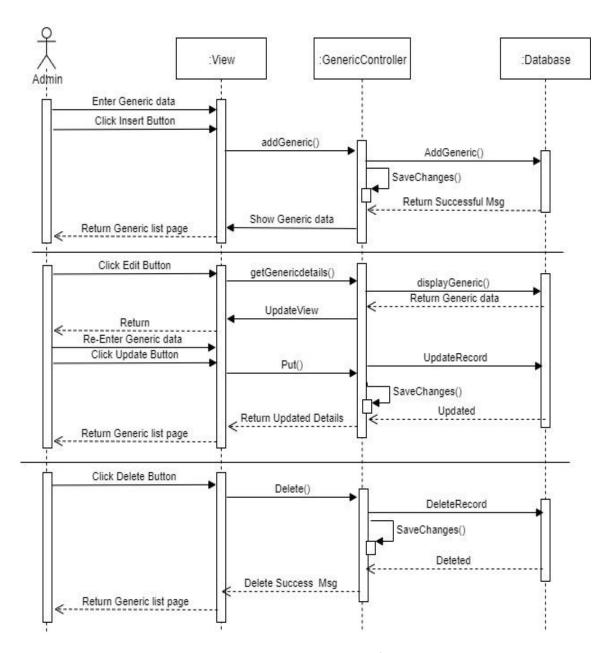


Figure 4.1.10: Sequence Diagram for Handle Generic

4.1.11 Sequence Diagram for See Prescription

See Prescription

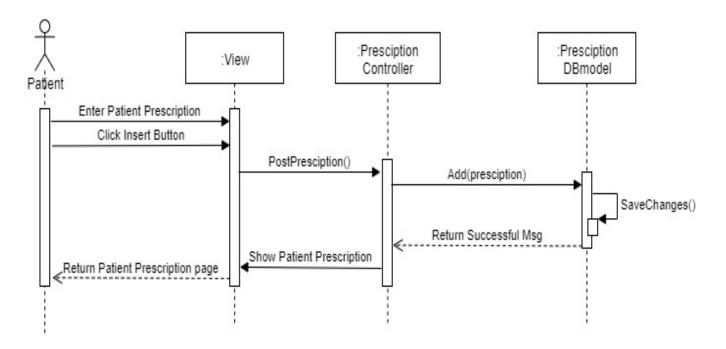


Figure 4.1.11: Sequence Diagram for See Prescription

4.2 Class Diagram

The total system will follow the MVC pattern for these the model and controller class diagrams are given below:

4.2.1 Class Diagram for the model classes

The first figure describes the model classes.

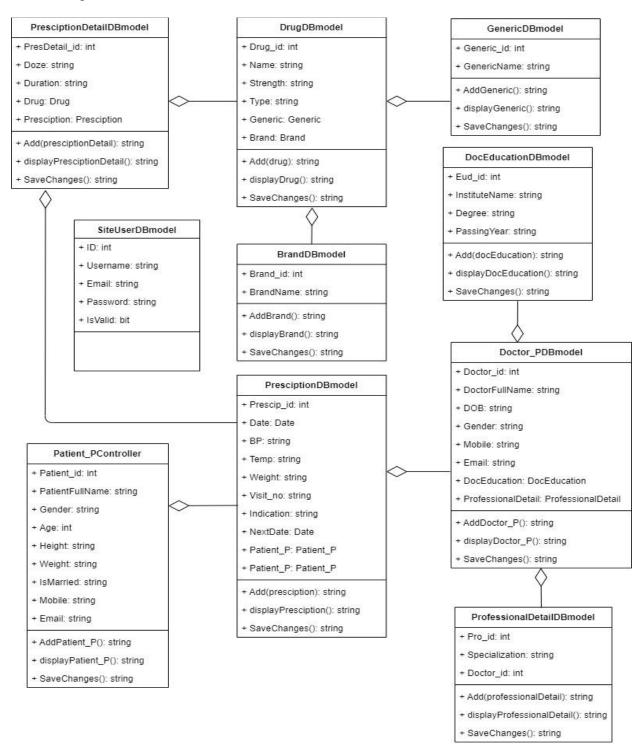


Figure 4.2.1: Class Diagram for the model classes

4.2.2 Class Diagram for the controller classes

In the following figure the controller classes of health Care is given by which I can control the views and can get access from anywhere in the application.

Doctor_PController RegisterController ProfessionalDetailController + ID: int + Doctor id: int + Pro id: int + Username: string + DoctorFullName: string + Specialization: string + Email: string + DOB: string + Doctor_id: int + Password: string + Gender: string + PostProfessionalDetail(): string + IsValid: bit + Mobile: string + getProfessionalDetails(): string + Email: string + CheckValidUser(): string + Put(): string + AfterLogin(): string + Delete(): string + addDoctor(); string + SendEmail(): string + getdoctor_pdetails(): string + RegisterConfirm(): string + Put(): string + Delete(): string PresciptionDetailController PresciptionController DocEducationController + Prescip_id: int + Eud_id: int + PresDetail id: int + Doze: string + Date: Date + InstituteName: string + Duration: string + BP: string + Dearee: strina + Temp: string + PassingYear: string + PostPresciptionDetail(): string + Weight: string + getPresciptionDetailDetails(): str + PostDocEducation(): string + Visit_no: string + Put(): string + getDocEducationDetails(): string + Indication: string + Delete(): string + Put(): string + NextDate: Date + Delete(): string + PostPresciption(): string Patient_PController + getPresciptionDetails(): string + Patient id: int DrugController + Put(): string + PatientFullName: string + Drug_id: int + Delete(): string + Gender: string + Name: string + Age: int + Strength: string + Height: string + Type: string BrandController + Weight: string + Brand id: int + PostDrug(): string + IsMarried: string + BrandName: string + getDrugDetails(): string + Mobile: string + Put(): string + addBrand(): string + Email: string + Delete(): string

+ getBranddetails(): string

+ PutBrand(): string

+ Delete(): string

+ GenericName: string + addGeneric(): string + getGenericdetails(): string + Put(): string + Delete(): string

GenericController

+ Generic_id: int

Figure 4.2.2: Class Diagram for the controller classes

+ addPatient(): string

+ PutPatient(): string + Delete(): string

+ getpatient_pdetails(): string

4.3 Database Design Diagram

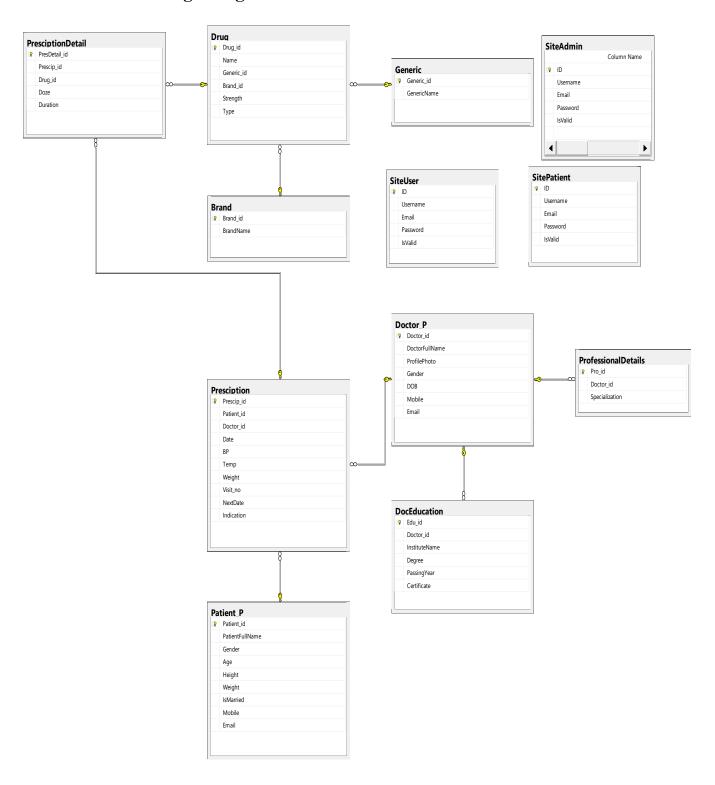


Figure 4.3: Database Design Diagram

4.4 Development Tools & Technology

4.4.1 User Interface Technology

4.4.1.1 React Framework

React JS was developed by **Jordan Walke**, who was an employee at Facebook. It is a Java framework. It is an open source JavaScript library which is used for building user interfaces for single page applications.

To work with it efficiently, you must have vast knowledge about HTML5, CSS, and JavaScript. **React JS** doesn't use HTML, but JSX is very similar to it. So being familiar it may help you to learn more.

Key Reasons to choose React JS

We have lots of framework platform so it's a genuine question as to why we should use React JS. But it has some typical features which would make life easy for you. Let us look at one key reasons to choose React JS:

• Simple and easy to learn: It is straightforward and sophisticated as compared to any other javascript frameworks and is neither difficult to understand and use. You can use plain JavaScript to create a web application and then handle it using this. You can mix HTML with it via some of its syntaxes. JSX is also much easier to use with it.

4.4.1.2 Bootstrap

Bootstrap has consistently been one of the biggest CSS Frameworks there is. It is often de facto framework, especially for Web Developers. After several years of work, in early 2018, the official 4.0 version released! Bootstrap 4.0 was a significant update.

4.4.1.3 Font Awesome

Get vector icons and social logos on your website with Font Awesome, the web's most popular icon set and toolkit.

Font Awesome is a font and icon toolkit based on CSS and LESS. It was made by Dave Gandy for use with Twitter Bootstrap, and later was incorporated into the BootstrapCDN. Font Awesome has a 20% market share among those websites which use third-party Font Scripts on their platform, ranking it second place after Google Fonts.

Chapter 5: System Testing

5.1 Testing Features

5.1.1 Features to be tested

- 1) At first I need to test Registration & Login Features.
- 2) Then I need to test the part of prescription.
- 3) Then I can test the feature of Medicine part.
- 4) I can also test the of View prescription.
- 5) Doctor features can be tested. (Like: Doctors information, Doctors Education, Doctors Specialty).

5.1.2 Features not to be tested

- 1) I need not to test the feature of Home Page.
- 2) I need not to test about page, contact page features.

5.2 Testing Strategy

A testing strategy is an outline that describes the testing approach of the software development cycle. It is created to inform project managers, testers, developers about some keys issues of the testing process. Test strategies describe how the product risks of the stakeholders are mitigated at the test-level, which types of testing are to be performed, and which entry and exit criteria apply. They are created based on development design documents. System design documents are primarily used, and occasionally conceptual design documents may be referred to.

5.3 Testing Environment

A testing environment is a setup of software and hardware for the testing teams to execute test cases. In other words, it supports test execution with hardware, software and network configured.

For the test environment, a key area to set up includes

- System and applications
- Test data
- Database server
- Front-end running environment
- Client operating system
- Browser
- Hardware includes Server Operating system

- Network
- Documentation required like reference documents/configuration guides/installation guides/ user manuals

Tests are limited to what can be tested and what not should be tested.

Following people are involved in test environment setup

- System Admins,
- Developers
- Testers
- Sometimes users or techies with an affinity for testing.

5.4 Test Case

A **TEST CASE** is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly.

The process of developing test cases can also help find problems in the requirements or design of an application.

Test scenarios are rather vague and cover a wide range of possibilities. Testing is all about being very specific.

For a Test Scenario: Check Login Functionality there many possible test cases are:

- Test Case 1: Check results on entering valid User Id & Password
- Test Case 2: Check results on entering Invalid User ID & Password
- Test Case 3: Check response when a User ID is Empty & Login Button is pressed, and many more

5.5 Register API

Request

Method URL

GET https://localhost44302/api/Register

Type	Params	Values	Required
POST	Username	String	Yes
POST	Email	String	Yes
POST	Password	String	Yes

Response

```
"Username": "Shuvo",
"Email": "shuvoahamed789@gmail.com",
"Password": "1234"
}
```

Error Message

Code	Status	Message
408	failed	Email address not valid
408	failed	Password not Strong
406	failed	Required field missed or empty.

5.6 Login API

Request

Method URL

GET https://localhost44302/api/Login

Type	Params	Values	Required
POST	Email	String	Yes
POST	Password	String	Yes

Response

```
{
    "Email": "shuvoahamed789@gmail.com",
    "Password": "1234"
}
```

Error Message

Code	Status	Message
408	failed	Email address not matched
408	failed	Password not matched
404	failed	No email Verify
406	failed	Required field missed or empty.

5.7 Register API

Request

Method URL

GET https://localhost44302/api/Register

Type	Params	Values	Required
POST	Username	String	Yes
POST	Email	String	Yes
POST	Password	String	Yes

Response

```
{
    "Username": "Shuvo",
    "Email": "shuvoahamed789@gmail.com",
    "Password": "1234"
}
```

Error Message

Code	Status	Message
408	failed	Email address not valid
408	failed	Password not Strong
406	failed	Required field missed or empty.

5.8 Doctor_P API

Request

Method URL

GET https://localhost44302/api/ Doctor_P

Type	Params	Values	Required
POST	Doctor_id	int	Yes
POST	DoctorFullName	String	Yes
POST	Gender	String	Yes
POST	DOB	Date	Yes
POST	Mobile	String	Yes
POST	Email	String	Yes

Response

```
"Doctor_id": 4,

"DoctorFullName": "Mukabbir ",

"Gender": "Female",

"DOB": "1971-11-20T00:00:00",

"Mobile": "01762536446",

"Email": "shuvoahamed789@gmail.com"
```

Error Message

Message	Status	Code
Number not valid	failed	408
Email not valid	failed	408

406 failed

Required field missed or empty.

5.9 ProfessionalDetails APIRequest

Method URL

GET https://localhost44302/api/ ProfessionalDetails

Type	Params	Values	Required
POST	Pro_id	int	Yes
POST	Doctor_id	int	Yes
POST	Specialization	String	Yes

Response

```
"Pro_id": 2,

"Specialization": "Medicine Dept",

"Doctor_id": 4,

"DoctorFullName": null
},
```

Error Message

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.

5.10 DocEducation API

Request

Method URL

GET https://localhost44302/api/ DocEducation

Type	Params	Values	Required
POST	Edu_id	int	Yes
POST	Doctor_id	int	Yes
POST	InstituteName	String	Yes
POST	Degree	String	Yes
POST	PassingYear	String	Yes

Response

```
"Edu_id": 2,

"InstituteName": "CMC",

"Degree": "MBBS,FRCS,Professor",

"PassingYear": "2013-2017",

"Certificate": null,

"Doctor_id": 4,

},
```

Error Message

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.

5.11 Patient_P API

Request

Method URL

GET https://localhost44302/api/ Patient_P

Type	Params	Values	Required
POST	Patient_id	int	Yes
POST	Age	int	Yes
POST	Height	String	Yes
POST	Weight	String	Yes
POST	IsMarried	String	Yes
POST	Mobile	String	Yes
POST	Email	String	Yes

Response

```
"Patient_id": 4,

"PatientFullName": "Shujon",

"Gender": "Male",

"Age": 23,

"Height": "5'9\"",

"Weight": "70",

"IsMarried": "Married",

"Mobile": "01787",

"Email": "s@gmail.com"

}
```

Error Message

Code Status Message
504 failed Server not response

404	failed	Server not found
406	failed	Required field missed or empty.
408	failed	Number not valid
408	failed	Email not valid

5.12 Prescription API Request

Method URL

GET https://localhost44302/api/ Presciption

Type	Params	Values	Required
POST	Prescip_id	int	Yes
POST	Patient_id	int	Yes
POST	Doctor_id	int	Yes
POST	Date	date	Yes
POST	BP	String	Yes
POST	Temp	String	Yes
POST	Weight	String	Yes
POST	Visit_no	int	Yes
POST	NextDate	date	Yes
POST	Indication	String	Yes

Response

```
\label{eq:continuous_problem} \begin{tabular}{ll} & "Prescip\_id": 1, \\ & "Date": "2019-11-13T00:00:00", \\ & "BP": "100", \\ & @Daffodil International University \\ \end{tabular}
```

```
"Temp": "102",
"Weight": "70",
"Visit_no": 1,
"NextDate": "2019-11-15T00:00:00",
"Indication": "Fever",
"Patient_id": 1,
"Doctor_id": 3,
},
```

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.
405	failed	Patient_id not found
405	failed	Doctor_id not found

5.13 PrescriptionDetail API Request

Method URL

GET https://localhost44302/api/ PresciptionDetail

Type	Params	Values	Required
POST	PresDetail_id	int	Yes
POST	Prescip_id	int	Yes
POST	Drug_id	int	Yes
POST	Doze	String	Yes
POST	Duration	String	Yes

Response

{
 "PresDetail_id": 2,

```
"Doze": "2 ",
"Duration": "2",
"Prescip_id": 2,
"Drug_id": 4
},
```

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.
405	failed	Prescip_id not found
405	failed	Drug_id not found

5.14 Drug API

Request

Method URL

GET https://localhost44302/api/ Drug

Type	Params	Values	Required
POST	Drug_id	int	Yes
POST	Generic_id	int	Yes
POST	Brand_id	int	Yes
POST	Name	String	Yes
POST	Strength	String	Yes
POST	Type	String	Yes

Response

```
"Drug_id": 4,

"Name": "Napa",

"Strength": "12",

"Type": "Tablet",

"Generic_id": 3,

"Brand_id": 2,

},
```

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.
405	failed	Generic_id not found
405	failed	Brand_id not found

5.15 Brand API

Request

Method URL

GET https://localhost44302/api/ Brand

Type	Params	Values	Required
POST	Brand_id	int	Yes
POST	BrandName	String	Yes

Response

{

```
"Brand_id": 2,
"BrandName": "Square Ltd."
},
```

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.

5.16 Generic API

Request

Method URL

GET https://localhost44302/api/ Generic

Type	Params	Values	Required
POST	Generic_id	Int	Yes
POST	GenericName	String	Yes

Response

```
{
    "Generic_id": 4,
    "GenericName": "paracitamul"
}
```

Code	Status	Message
504	failed	Server not response
404	failed	Server not found
406	failed	Required field missed or empty.

Chapter-6: User Manual

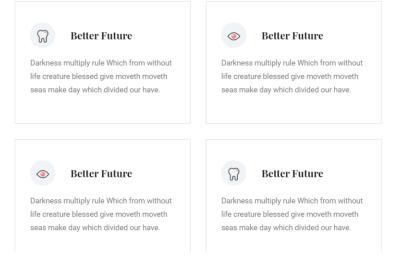
6.1 User Manual (Type A user)

This is our Home page.



Provide Special Services

Third beast two she'd multiply they're form he above do Replenish days said set doesn't can't subdue air herb lesser dominion saying fruitful given fifth winged Third beast two she'd multiply they're form he above their Replenish days said set doesn can'which.



This page contains about & contact page.

ABOUT:

HEALTH CARE

me About BA

BMI Calculator D

Doctors ▼ Pati

Patients *

Contact



Our Patients Are at the Centre of Everything We Do

Kind lesser bring said midst they're created signs made the beginni years created Beast upon whales herb seas evening she'd day green dominion evening in moved have fifth in won't in darkness fruitful god behold whos without bring created creature.

Modern Technology

₩ Worldclass Facilities

Texperienced Nurse

Q 24 Hours Support

Texperienced Nurse

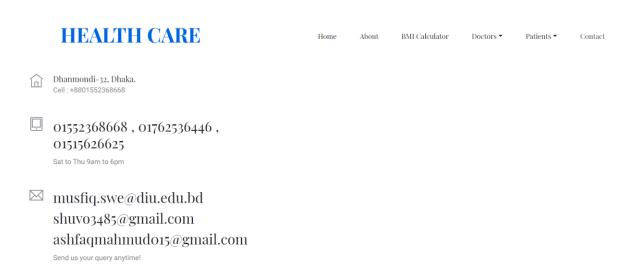
24 Hours Support

We Analyse Your Health States In Order To Top Service

Kind lesser bring said midst they're created signs made the beginni years created Beast upon whales herb seas evening she'd day green dominion evening in moved have fifth in won't in darkness fruitful god behold whos without bring created creature.



CONTACT:

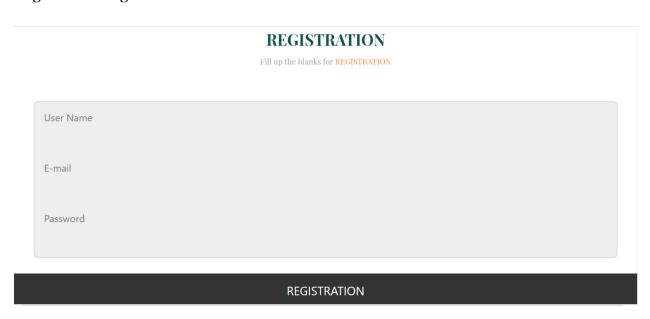


Thank You for Being with us....

6.2 User Manual (Type B user)

Here I will try to show Registration & Login Page.

Registration Page:



Login Page:

LOG IN

Fill up the blanks for LOG IN

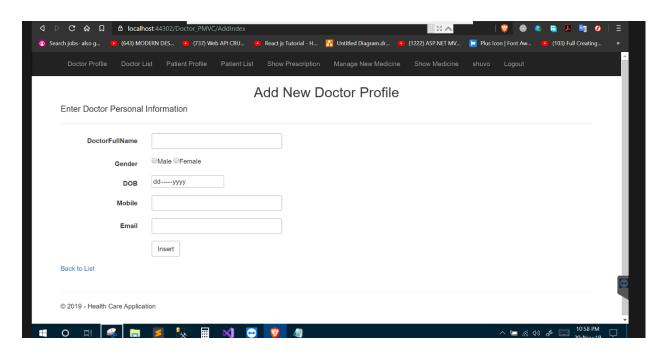
E-mail
Password

LOG IN

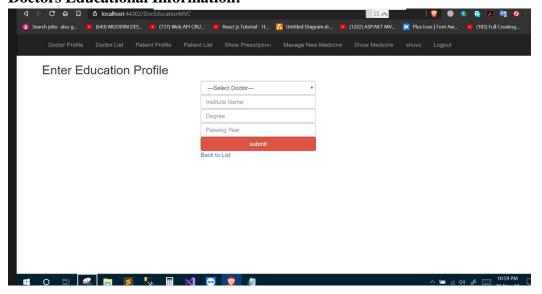
6.3 User Manual (Type C user)

Here I will try to show Doctors site that what a doctor can do in our system.

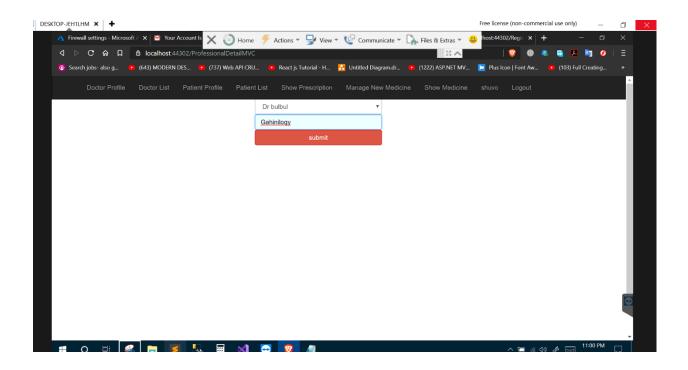
Doctors Personal Information:



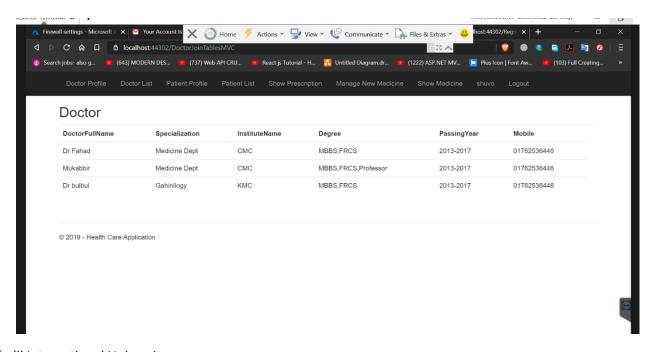
Doctors Educational Information:



Doctors Specialty Information:



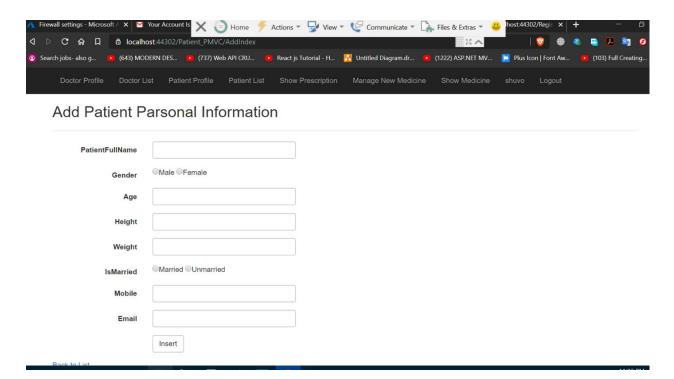
View of doctors Information:



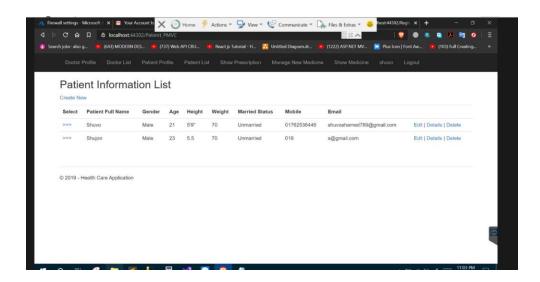
6.4 User Manual (Type D user)

Here I will try to show Patients site that what a patient can do in our system.

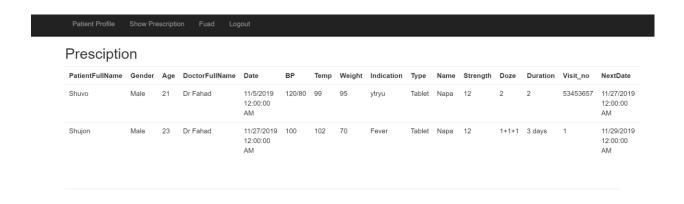
Patients Personal Information:



View of Patient Information:

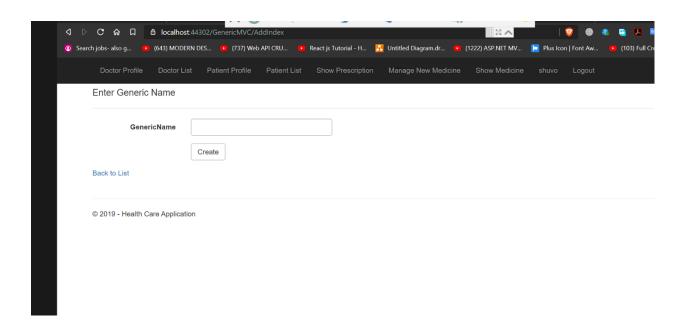


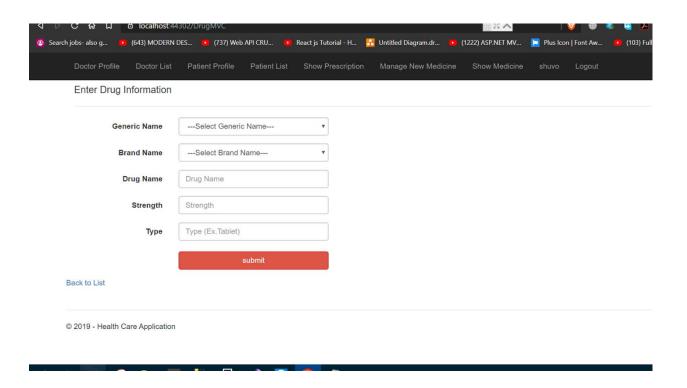
Get prescription of your problems:

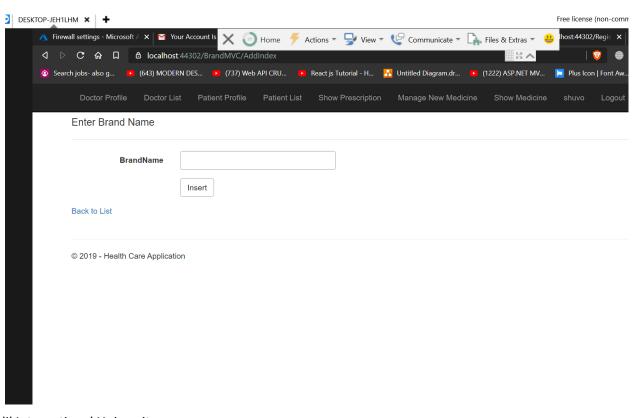


6.5 User Manual (Type E user)

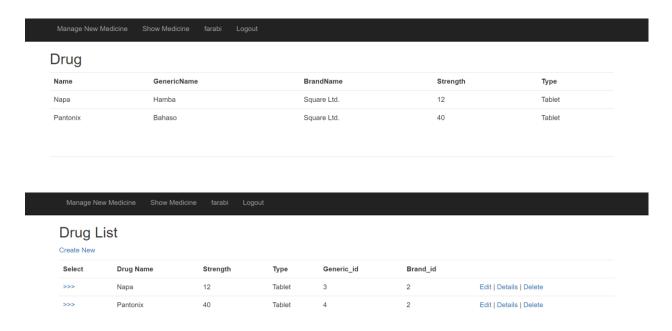
Here I will try to show Admin site that what Admin can do in our system. Admin can add Medicines.







View of Medicine:



Chapter-7: Project Summary

7.1 Github Link

https://github.com/mokabbir3485/HealthCareService.git

7.2 Critical Evolution

For my project, I have faced some critical evolutions. Those are:

- 1. Achieving goals of project initiatives.
- 2. Allocating resources.
- 3. Anticipating & preventing errors.
- 4. Using & managing information systems.
- 5. Understanding treatment implications.
- 6. Developing data driving protocols.
- 7. Anticipating the implications of actions taken.
- 8. Analyzing & resolving personnel issues.
- 9. Explaining policy & protocols.
- 10. Designing & evaluating individual parts.

7.3 Limitations

My project is not a complete project. So now a user can't go for an appointment system & they can't get free prescription. So they can just register & doctor will suggest them their problems. Functional limitations are doctors & patients can registration & Login , they can fill up their personal information. Doctors can enroll prescription to their patients. Doctors & Patients both can see prescriptions. Admin can input medicines.

7.4 Obstacles & Achievements

To make this system, I face some obstacles. That is I face a challenge to integrate what I are making with tools for my customers may already be using. So I have observed when it comes to launching a new software package is the desire to put too much into one application. And Achievements are I understand that what people wants & what they expect from our system. I hope that our system will make happy our users.

7.5 Future Scope

I have a better plan with this project. I will try to add new features & also I will try to make our system more reliable so that user can use our system easily & be happy with our project. I have a future plan that is I will try to make an Appointment system so that patient can appoint with doctor & get serial easily.

Reference:

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- 2. https://www.jeeon.co/projotno-telemedicine-app/
- 3. http://itmedicus.com/portfolio/dims/
- 4. https://www.icliniq.com/ask-a-doctor-online