

MineUddin-PrescriptionV2- Turnitin

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Design and Implementation of a Web Based Prescription System

A Project Report

Submitted to the Department of Computer Science and Engineering,
Jahangirnagar University in partial fulfillment of the requirements for the
degree of Master of Science in Computer Science under PMSCS program.

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Approval of Acceptance

This project report is written by Md. Mineuddin Ahmed Dipu¹ (ID: CSE202103099) entitled “Design and Implementation of a web based prescription system” is submitted to the PMSCS Program, Department of Computer Science and Engineering, Jahangirnagar University in partial fulfillment of the requirements for the degree of Master of Science in Computer Science. The project is done under the supervision of Professor Dr. Md. Ezharl Islam, Department of Computer Science and Engineering, Jahangirnagar University.

We have examined this report and recommend its acceptance.

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Declaration:

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There, I declare that the task presented in this report is the outcome of the investigation
performed by me under the supervision of Professor Dr. Md. Ezharul Islam, Department
of Computer Science and Engineering, Jahangirnagar University. The work was spread
over one final semester course: Research Project, in accordance with the course
curriculum of the department for the Professional Masters of Science in Computer
Science.

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Acknowledgment:

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I would like to give thanks especially to the following people who have helped me a lot for completing this project possible:

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Dr. Md. Ezharl Islam (My supervisor) Department of Computer Science and Engineering, Jahangirnagar University, for giving me the opportunity to undertake this project with him and also for his support and guidance.

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and my department of staffs.

Md. Rahul (My friend), for his tremendous knowledge on anything programming or logic related and his willingness to always help.

Abstract:

The key objective of this project is to provide a high tech online prescription with full of medicine list, investigation list and patient/doctor satisfaction. To develop this project I use Restful API for breezing with backend and frontend. For backend I use PHP 7.4 and Laravel framework and for frontend I use React 18.0 version. We will release the newer version day by day and always try to make it smooth, easy and fast loader. In the current version we try to provide very user friendly, easy to understand and a clean and smooth interface for the admin user, doctors and patient. Their admin can easily configure doctor, patient, medicine and other related settings for creating a prescription. The prescription will automatically send through email to the patients and also a patient can download the prescription after log into their own dashboard.

This document is the final report for the project online prescription system for doctors. Besides we will create more opportunities for new doctors so they can connect, share and learn more from our prescription.

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Chapter 1

Introduction

1.1 Motivation :

The core motivation behind this system is to reduce doctor's effort and patient hassle to understand the writing of doctors and the name of the medicines. Often patients are complaining that they don't understand the writing of doctor's. On the other hand a doctor has write a lots of prescription daily. They also has to write the same things repeatedly. Which is really annoying. We also face the same issue that sometimes we don't understand the writing of doctors. So, to help both doctors and patients we want to introduce this solution. So it will helpful for both doctors and patients.

1.2 Objectives

The main objective is to obtain doctors and patient satisfaction on health related sector. To reduce doctor's effort and patient hassle to understand the writing of doctors and the name of the medicines. Often patients are complaining that they don't understand the writing of doctor's. On the other hand a doctor has write a lots of prescription daily. They also has to write the same things repeatedly. Which is really annoying. We also face the same issue that sometimes we don't understand the writing of doctors. So, to help both doctors and patients we want to introduce this solution. So it will helpful for both doctors and patients. By this system all new comers doctor will be benefited. They will get a huge data set for research purpose. They can study the previous patient's history and what the prescription has provided to the patients for their betterment.

1.3 Project Scope:

By this project doctors and patient both can be benefited. Doctors can easily prescribe patient. They can keep record of their patient and patient also get email of the prescription. So they also can track their health history. They don't need to preserve any piece of paper at their home. Moreover a piece of paper may destroy at any time. On the other hand if the patient will come after a long time then the doctor can easily track this patient previous record. So it will easy to find the previous health history of any patient. A doctor also can research on the data he has. He also can share his experience with other practitioners and medical student for their study purpose. Overall it can play an incredible role in our health care sector.

1.4 Problem Definition

It is a very difficult task to collect the information of all the patient variation and their diseases and create a database. Moreover a prescription system is the only way to collect information from anywhere in the world through the prescription system.

1.5 Research Methodology

I took an initiative to development a web based prescription system. Through which a solution to for both doctors and patients. In creation this system, I will use HTML5, CSS 3, React Bootstrap4 ,REACT, PHP 7.4 framework Laravel (MVC) ,MySQL

1.6 Outline

This Prescription System is developed in such a way where a Doctor can be able to write prescription for their patient easily. Simple and easy admin panel to manage all Process. This system can store huge data as an archive. Can build report if need in future. Most popular and common language are used to develop this web system. Every user can see basic information but restricted to access permission.

Chapter 2

Background and Related Work

2.1 Introduction :

The interface helps the doctor to login through the system and add the details regarding the prescription. There are two type of user's. Admin user and Doctor Users.

The Admin users will login the system and make the basic configuration for the doctors to write prescription and see the previous prescription and analysis the input.

2.2 Background and History:

An online prescription system is software for doctors to create online prescription for patient for better experience of the patients so that understand well and keep track about health record. From the very beginning of the prescription practice doctors do it manually and give the prescription paper to the patient. Patient use it for doing prescribed investigation and taking medicine from shops. They need to keep it for further visit to the doctors so that doctor easily remember about the previous case history of that particular patient. There are some problems like patient may stole the paper or that paper may destroyed by water, fire or environmental case. So it is not possible for them to recollect the paper easily.

For this it is important to keep the prescription in online. It will helpful for both doctor and patient.

2.3 Related Work and Gap Analyze

There is already some same kinds of systems in the local and global market already. But still I did not get any open source platform where doctor can freely create account and doing prescription. Moreover everybody have some limitations in their system. So we want to make our systems open source so any one from anywhere in the world can use it. Moreover we also want to solve that limitations so that it becomes more user friendly and easy to use. Below I mention some others work. I am also going to show the difference between our system and others system. The comparison is listing below of the figure.

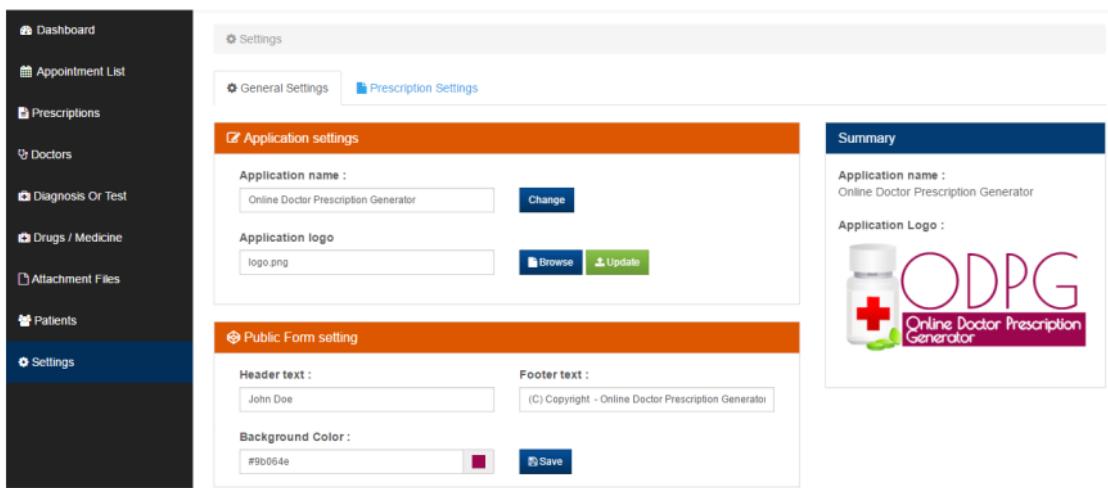


Figure 2.1 : Evanto Market's Prescription Interface

Description: Displaying the interface of a prescription system in evanto market place.

The screenshot shows the 'Prescription' section of the Indian Hospitals interface. The left sidebar has tabs for Profile, Account, SMS, Email, Consultants, **Prescription** (selected), Treatments, and Expense. The main area shows a list of medicines under 'Prescription'. It includes 'Medicines' (Hydent.K Paste, Tab. Zerodol SP, CAP SUMOX), 'Add new medicines' (with an arrow pointing to it), 'Add New', 'Medicine Groups' (Filing, Hydent.K Paste, Tab. Zerodol SP), and 'Delete' buttons for each item. A red arrow points to the 'Add New' button in the Medicine Groups section.

Figure 2.2 : Indian Hospitals Prescription Interface

Description: Displaying the interface of a prescription system of an indian hospital.

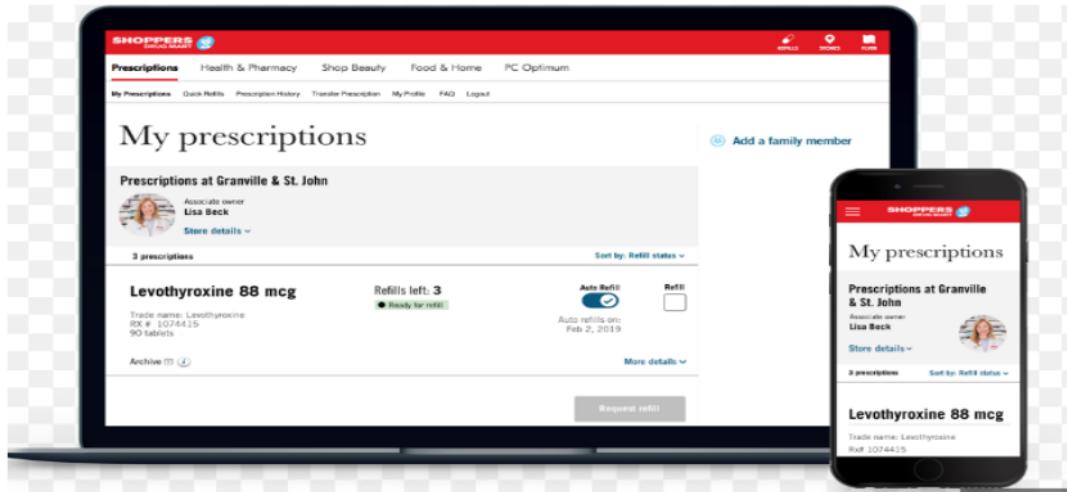


Figure 2.3: Global Hospitals Web Prescription including app

Description: Displaying the interface of a prescription system of a Global hospitals prescription.

Comparison Table With Other System

SL	Feature Name	Description	Others	Prescription
1	Home	This is Landing Page	Yes	Yes
2	Email Prescription	Prescription Soft Copy	No	Yes
3	Registration	Applicant Registration Form	Yes	Yes
4	Login	Login admin/normal users	Yes	Yes
5	Doctor Registration	Doctor Registration	Yes	Yes
6	Doctor assistant Registration	Doctor assistant registration for helping doctor	No	Yes
7	Previous History	All previous history display	No	Yes
8	Admin panel login	Login admin panel	Yes	Yes
9	Doctor Dept. wise Config	Prescription interface as per doctor department	No	Yes
10	Patient Login	Patient login for download prescription	No	Yes
11	Other configuration	Medicine, advice, investigation etc config	Yes	Yes
12	Management Related all Report	Display all management related report	No	Yes

Chapter 3

System Analysis

3.1 Introduction

Software or **system analysis** is an area in which analysts are regularly learn new things and approaches to accurately gather, understand, maintain and create more effective and efficient software systems. So, here we discuss how we analyze my systems to achieve the goal. How we collect all of our requirement, analyze all those requirements and then finalize what actually should take for consideration to build the system for a better experience.

3.2 Software Requirement Specification (SRS)

3.2.1 System Environment

The Admin, Doctor and Patient accesses the Prescription through the Internet and locally both. Admin make the configuration and doctors create the prescription for the patient. Patient can login to the system and download his/her prescription only.

3.2.2 Users Characteristic

- The patient is supposed to have some knowledge about Internet and be able to use a search engine. He should search the prescription link and login with his credential and just download his prescription.

- The Admin is expected to be Internet literate and to be able to use email, software. He has to configure the whole system for the hospitals to make it usable for the doctors to write prescription.

- The Doctors are expected to use software. So they can make the prescription for patients. They just have to entry medicine name, investigation name and advice. They also see various report. They just search them. All will be pre-configured.

Moreover the specifications are....

Add Medicine, Update Medicine, Delete Medicine, Search Medicine, Add User, Add Doctor, Add Patient, Add/Edit Strength, Add/Edit Medicine Type, Add/Edit Generic, Add/Edit Chamber etc.

3.3 Detailed Requirement Specification

3.3.1 Functional Requirement

The Functional requirement is what the software offer and its full description.

Pre-configuration for medicine and Prescription like medicine type, generic entry and some others.

Triggering	Admin selects to add/edit new entities to the database.
Pre-condition 2	Admin already access the configuration page.
General Path	<ol style="list-style-type: none"> 1. The software shows a blank div to enter all the required data. 2. The admin enters the information and submit the form. 4 3. Software check that the required fields are blank or not and updates the database.
Alternative Paths	In the second step, either the field is blank, the Editor is instructed to add an entry. Validation for correctness is not made.
Post-Condition	All entities has been added to the database. 31
Exceptions	Admin may abandon the operations at any time.

Add Patient and Doctor

Triggering	Admin selects to add new patient and doctor to the database.
Pre-condition 2	Admin has accessed the configuration page.
General Path	<ol style="list-style-type: none"> 1. The software shows a blank div to enter the required information. 2. The admin enters the informations and submit the form 2 3. Software check that the required fields are blank or not and updates the database.
Alternative-Paths	In the second step , either the field is blank, the Editor is instructed to add an entry.

	Validation for correctness is not made.
Post Conditions	The patient and doctor has been added to the database.
Exception Paths	Admin may abandon the operations at any time.
Trigger	Admin selects to add new entities to the database. 2

Create Prescription

Triggering	The doctor selects to create new prescription to the database. 2
Pre-condition	The doctor has accessed the configuration screen.
General Path	<ol style="list-style-type: none"> 1. The software shows a blank div to enter the required information. 2. The admin enters the information and submit the form. 3. Software check that the required fields are blank or not and updates the database.

Edit Prescription

Triggering	The doctor selects to update existing prescription to the database. 2
Pre-condition	The doctor has accessed the configuration screen.
General Path	<ol style="list-style-type: none"> 1. The software shows a blank div to enter the required information. 2. The admin enters the information and submit the form. 3. Software check that the required fields are blank or not and updates the database.

1.3.2 Non Functional Requirement

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3.1 Logical Structure of the Data

The logical structure of the data is going to be stored in the internal database as given below.

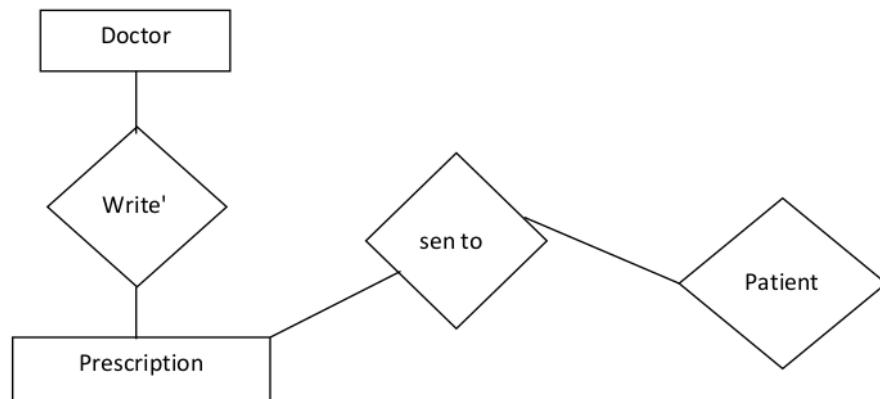


Figure 3.1 - Logical Structure of the Prescription Data

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Chapter 4

System Design

4.1 PHP and React Analysis and Design

PHP is a High-level Programming language and web framework Laravel that motivates perfunctory development and clean, technical design. Now a days it is the most powerful and common web framework for web development. I have used PHP 7.4 and Laravel Framework (MVC) and GUI for HTML5, CSS3 Specially React to develop Online Prescription. There we use REST API.

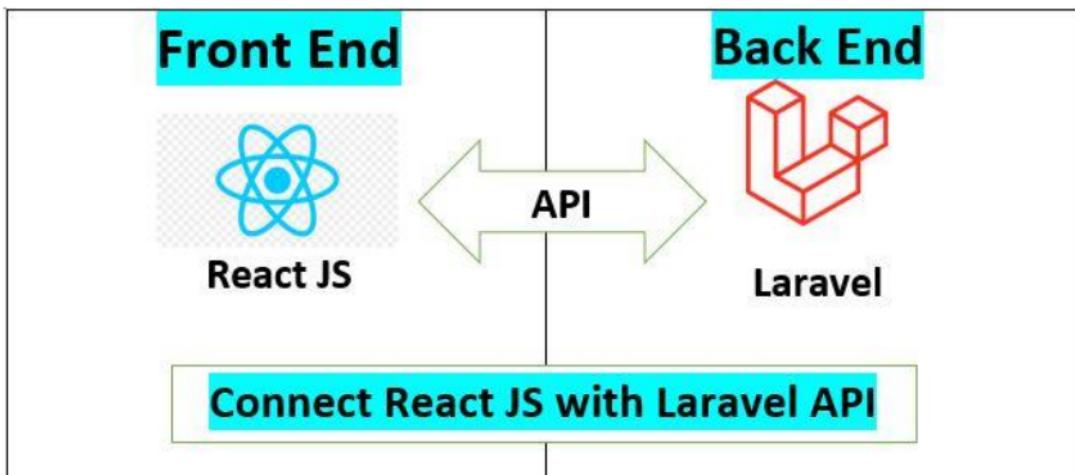


Figure 4.1: Showing How to connect React JS with Laravel API

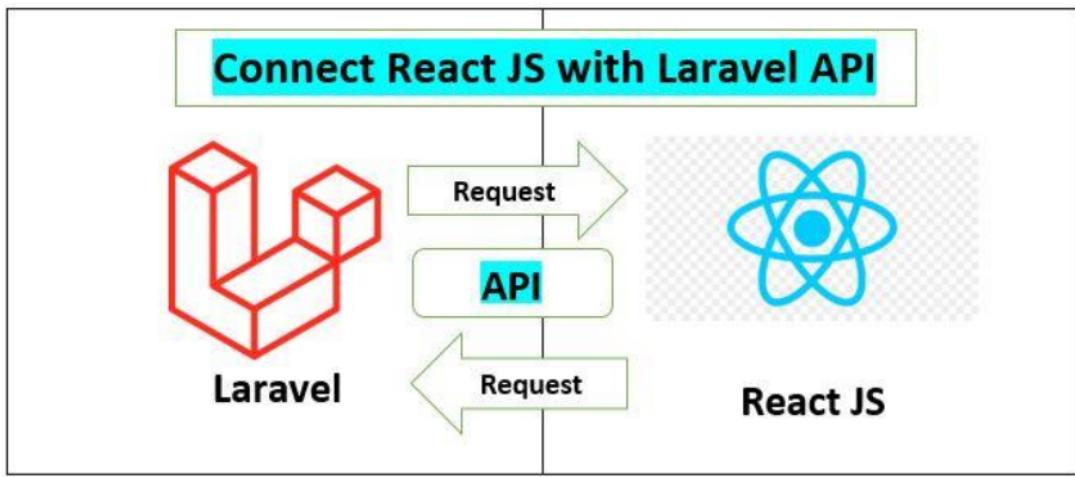


Figure 4.2: How Laravel API and React Request Response

4.2 Use Case Diagram

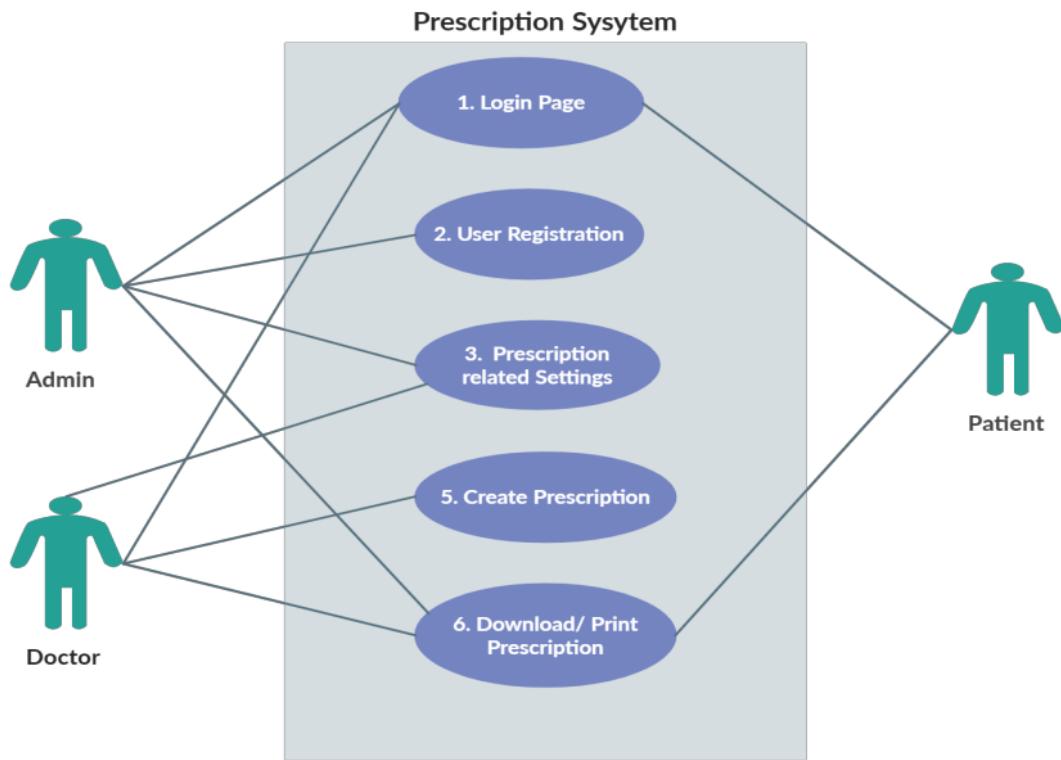


Figure 4.3: Use Case diagram

4.3 Use Case Description:

- 4.3.1 **Login Page:** Every user have to log in to the system first.
- 4.3.2 **User Registration:** Only Admin can register other admin, doctors and patient.
After that they can login to their portal.
- 4.3.3 **Prescription related settings:** There are so many prescription related settings.
Like medicine, investigation, advice, medicine supplier, medicine type, strength
and so on. Both doctor and admin can configure all this sort of works.
- 4.3.4 **Create prescription:** Only doctors can use this option. They can create, edit or
modify the previous prescription.
- 4.3.5 **Download/Print Prescription:** All the user of this system can see the prescription
and print the prescription copy.

4.4 Entity Relationship Diagram (ERD)

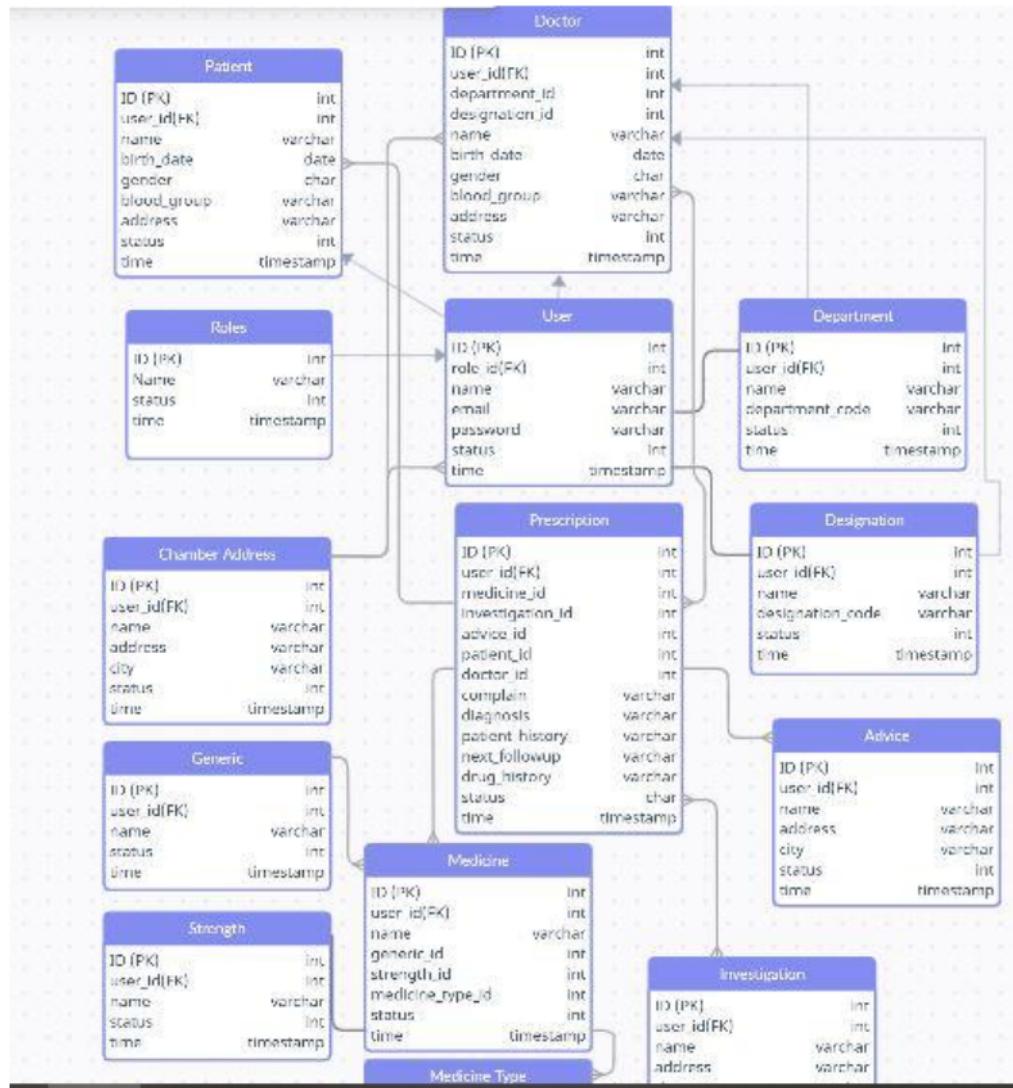


Figure 4.4: ER Diagram

Description: The above ER Diagram shows the relationships between the tables.

4.5 Database Screenshots

Table	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
investigations	int(10)	UNSIGNED	No	None			AUTO_INCREMENT	Change Drop More
medicines	int(10)	UNSIGNED	No	None				Change Drop More
medicine_advice	int(10)	UNSIGNED	No	None				Change Drop More
medicine_types	int(10)	UNSIGNED	No	None				Change Drop More
migrations	int(10)	UNSIGNED	No	None				Change Drop More
oauth_access_tokens	int(10)	UNSIGNED	No	None				Change Drop More
oauth_auth_codes	int(10)	UNSIGNED	No	None				Change Drop More
oauth_clients	int(10)	UNSIGNED	No	None				Change Drop More
oauth_personal_access_clients	int(10)	UNSIGNED	No	None				Change Drop More
oauth_refresh_tokens	int(10)	UNSIGNED	No	None				Change Drop More
password_resets	int(10)	UNSIGNED	No	None				Change Drop More
patients	int(10)	UNSIGNED	No	None				Change Drop More
prescriptions	int(10)	UNSIGNED	No	None				Change Drop More
pres_advice	int(10)	UNSIGNED	No	None				Change Drop More
pres_investigations	int(10)	UNSIGNED	No	None				Change Drop More
pres_medicines	int(10)	UNSIGNED	No	None				Change Drop More
roles	int(10)	UNSIGNED	No	None				Change Drop More
strengths	int(10)	UNSIGNED	No	None				Change Drop More
suppliers	int(10)	UNSIGNED	No	None				Change Drop More
users	int(10)	UNSIGNED	No	None				Change Drop More
visiting_fees	int(10)	UNSIGNED	No	None				Change Drop More
Sum								
113	InnoDB	utf8mb4_unicode_ci	1.2 MiB	0 B				

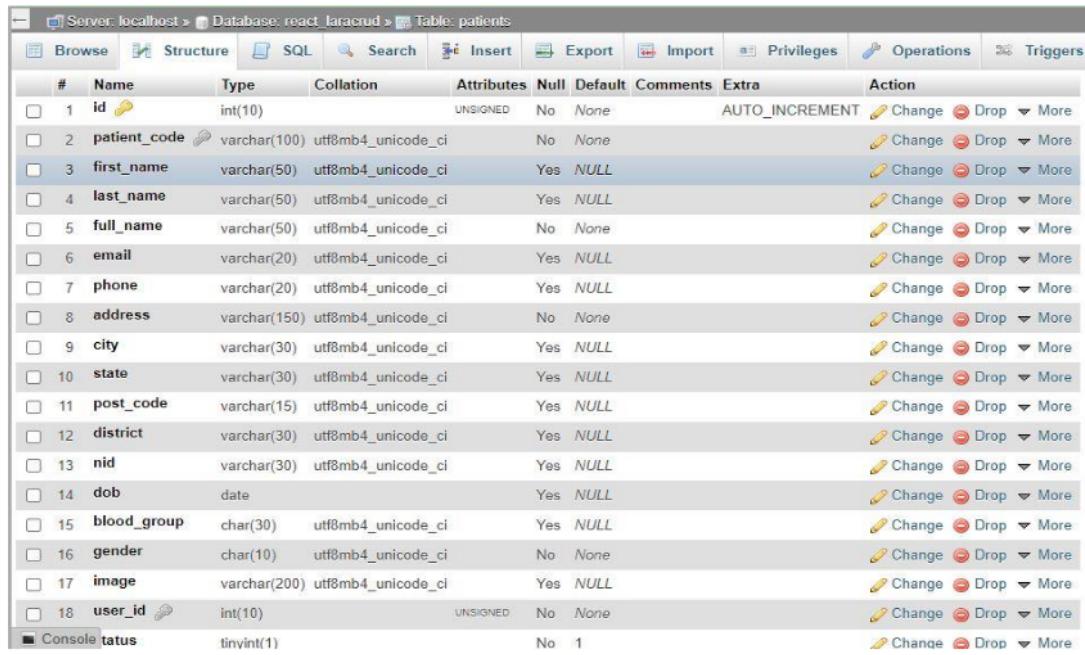
Figure 4.5: Prescription Database Table

Fig 4.5 Description: In the above figure it shows table structures of my projects database. To complete this project I used 31 tables. Below I also showing some of the major tables screenshot.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	id	int(10)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
2	role_id	int(10)		UNSIGNED	No	None			Change Drop More
3	name	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
4	email	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
5	email_verified_at	timestamp			Yes	NULL			Change Drop More
6	password	varchar(255)	utf8mb4_unicode_ci		No	None			Change Drop More
7	remember_token	varchar(100)	utf8mb4_unicode_ci		Yes	NULL			Change Drop More
8	created_at	timestamp			Yes	NULL			Change Drop More
9	updated_at	timestamp			Yes	NULL			Change Drop More

Figure 4.6: Prescription User Table

Fig 4.6 Description: In the above figure it shows users table and the columns I have used to preserve the users data.



The screenshot shows the MySQL Workbench interface with the following details:

- Server:** localhost
- Database:** react_laracrud
- Table:** patients
- Structure View:** Shows the columns of the patients table.
- Columns:**
 - id:** int(10), UNSIGNED, AUTO_INCREMENT
 - patient_code:** varchar(100)
 - first_name:** varchar(50)
 - last_name:** varchar(50)
 - full_name:** varchar(50)
 - email:** varchar(20)
 - phone:** varchar(20)
 - address:** varchar(150)
 - city:** varchar(30)
 - state:** varchar(30)
 - post_code:** varchar(15)
 - district:** varchar(30)
 - nid:** varchar(30)
 - dob:** date
 - blood_group:** char(30)
 - gender:** char(10)
 - image:** varchar(200)
 - user_id:** int(10), UNSIGNED, No, 1
 - status:** tinyint(1)
- Action Column:** Contains icons for Change, Drop, and More for each column.

Figure 4.7: Prescription Patient Table

Fig 4.7 Description: In the above figure it shows patients table and the columns I have used to preserve the patients data.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	<code>id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>		<code>AUTO_INCREMENT</code>	Change Drop More
2	<code>name</code>	<code>varchar(50)</code>	<code>utf8mb4_unicode_ci</code>		No	<code>None</code>			Change Drop More
3	<code>email</code>	<code>varchar(20)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
4	<code>phone</code>	<code>varchar(20)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
5	<code>department_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
6	<code>designation_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
7	<code>dob</code>	<code>date</code>			Yes	<code>NULL</code>			Change Drop More
8	<code>blood_group</code>	<code>char(30)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
9	<code>about_me</code>	<code>varchar(250)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
10	<code>image</code>	<code>varchar(200)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
11	<code>experience</code>	<code>varchar(200)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
12	<code>speciality</code>	<code>varchar(200)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
13	<code>degrees</code>	<code>varchar(200)</code>	<code>utf8mb4_unicode_ci</code>		No	<code>None</code>			Change Drop More
14	<code>user_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
15	<code>status</code>	<code>tinyint(1)</code>			No	1			Change Drop More
16	<code>created_at</code>	<code>timestamp</code>			Yes	<code>NULL</code>			Change Drop More
17	<code>updated_at</code>	<code>timestamp</code>			Yes	<code>NULL</code>			Change Drop More

Figure 4.8: Prescription Doctor Table

Fig 4.8 Description: In the above figure it shows doctors table and the columns I have used to preserve the doctors data.

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	<code>id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>		<code>AUTO_INCREMENT</code>	Change Drop More
2	<code>medicine_code</code>	<code>varchar(50)</code>	<code>utf8mb4_unicode_ci</code>		No	<code>None</code>			Change Drop More
3	<code>name</code>	<code>varchar(50)</code>	<code>utf8mb4_unicode_ci</code>		No	<code>None</code>			Change Drop More
4	<code>supplier_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
5	<code>generic_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
6	<code>strength_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
7	<code>medicine_type_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
8	<code>details</code>	<code>varchar(150)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
9	<code>side_effect</code>	<code>varchar(50)</code>	<code>utf8mb4_unicode_ci</code>		Yes	<code>NULL</code>			Change Drop More
10	<code>favourite</code>	<code>tinyint(1)</code>			No	1			Change Drop More
11	<code>user_id</code>	<code>int(10)</code>		<code>UNSIGNED</code>	No	<code>None</code>			Change Drop More
12	<code>status</code>	<code>tinyint(1)</code>			No	1			Change Drop More
13	<code>created_at</code>	<code>timestamp</code>			Yes	<code>NULL</code>			Change Drop More
14	<code>updated_at</code>	<code>timestamp</code>			Yes	<code>NULL</code>			Change Drop More

Figure 4.9: Prescription Medicine Table

Fig 4.9 Description: In the above figure it shows medicine table and the columns I have used to preserve medicines data.

The screenshot shows the MySQL Workbench interface with the following details:

- Server: localhost
- Database: react_laracrud
- Table: prescriptions
- Structure tab selected
- Table definition:

Column	Type	Properties	Operations
patient_id	int(10)	UNSIGNED, No, None	Change, Drop, More
doctor_id	int(10)	UNSIGNED, No, None	Change, Drop, More
date	varchar(50)	utf8mb4_unicode_ci, No, None	Change, Drop, More
bp	varchar(50)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
pulse	varchar(50)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
temp	varchar(50)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
weight	varchar(50)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
spo2	varchar(50)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
sugar	varchar(50)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
complain	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
diagnosis	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
past_history	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
drug_history	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
follow_up	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
others1	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
others2	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
others3	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
others4	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
others5	varchar(200)	utf8mb4_unicode_ci, Yes, NULL	Change, Drop, More
- Operations tab available

Figure 4.10: Prescription Table

Fig 4.10 Description: In the above figure it shows prescriptions table and the columns I have used to preserve the prescription data.

Chapter 5

Implementation & Result

5.1 Technology Used

4.1.1 Admin Interface Design:

- HTML5.0, CSS3, React JS.

4.1.2 Frontend and Backend Programming:

- Laravel 8.0 with Restful API.

4.1.3 Backend Database

- Mysql database.

5.2 Hardware Requirement for php7.4, REST API, React and mysql database

- ✓ Required Memory: 5 GB.
- ✓ Required CPU: Intel Core i3-2340UE.
- ✓ Required File Size: 4 GB.
- ✓ Required OS: Windows ,Linux

This are the minimum require hardware information for running online prescription systems.

5.3: GUI Design & Test Case

UI/UX design makes an active communication way between a user and a computer system. As people will the interface so it has to be clear and complete because it depict a user's perception of the system. As we know that the main thing of all software engineering process model is understanding the requirements before we go to design the system. We analysis about the ui/ux design before start to design the system.

5.3.1 Prescription Dashboard

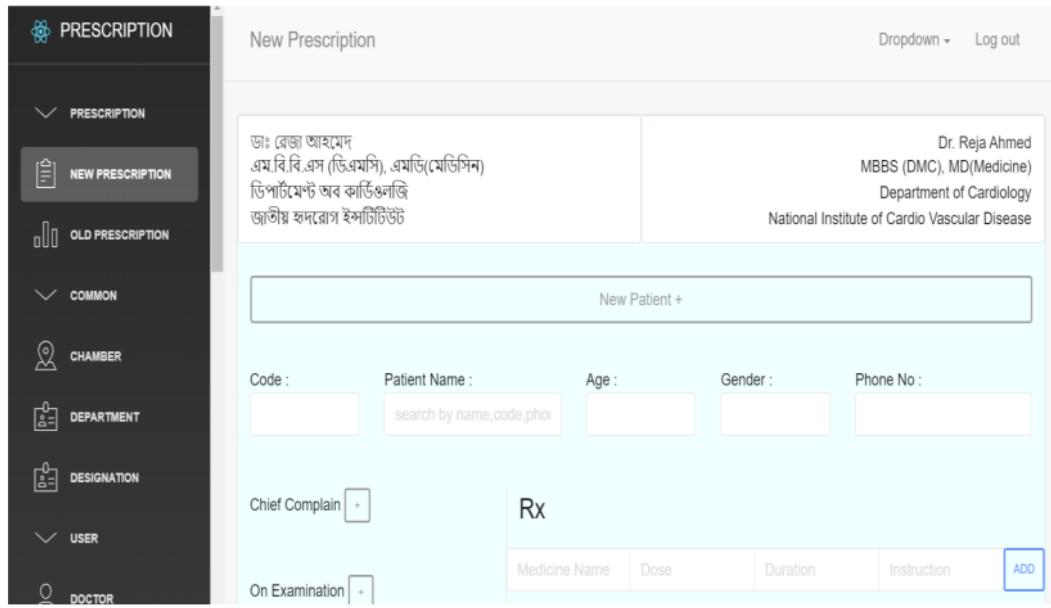


Figure 5.1: Dashboard Design

Fig 5.1 Description: The above image shows the main prescription panel. Where doctor write prescription for patients.

5.3.2 Sidebar Menu

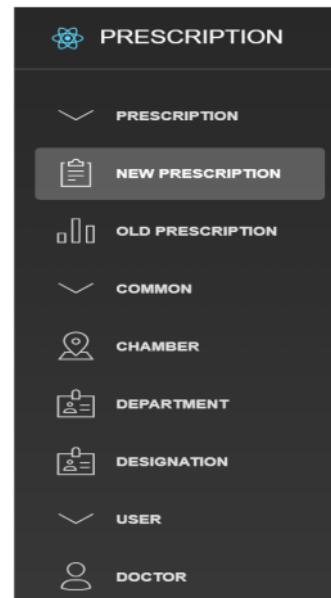


Figure 5.2: sidebar menu Page Design

Fig 5.2 Description: The above image shows the sidebar of the prescription panel. Where all menus are given.

5.1.3 Add Doctor Page

The screenshot shows the left sidebar of a prescription application. The sidebar has a dark background with white icons and text. It includes sections for PRESCRIPTION (with NEW PRESCRIPTION and OLD PRESCRIPTION), COMMON (with CHAMBER), DEPARTMENT, DESIGNATION, and USER. Under USER, there is a DOCTOR section. To the right of the sidebar is a table titled "Doctor List". The table has columns: PHOTO, NAME, DEPARTMENT, DESIGNATION, SPECIALITY, DEGREES, and ACTION. There are six rows of data, each with an "Edit" button in the ACTION column. The data is as follows:

PHOTO	NAME	DEPARTMENT	DESIGNATION	SPECIALITY	DEGREES	ACTION
	Dr. Monowar Khan	Operation Theatre	Senior Consultant	MBBS,FCPS		Edit
	Dr. Md. Mokbul Khan	Rheumatology	Consultant	MBBS,PGT(Eye)		Edit
	Dr. Md. Rafat Hossain	Orthopedics	Consultant	MBBS, MCPS		Edit
	Dr. Shahidul Islam	Orthopedics	Consultant	MBBS, FCPS		Edit
	Dr. Md. Akbar Ali	Orthopedics	Consultant	MBBS, FCPS		Edit
	Dr. Shamsul Arefin	Orthopedics	Consultant	MRCP		Edit

The screenshot shows a modal dialog titled "Doctor Add/Update". The form contains fields for Name (text input), Email (text input), Phone (text input), Department (dropdown menu labeled "Select Department"), Designation (dropdown menu labeled "Select Designation"), and Degrees (text input). At the bottom left is a "Close" button, and at the bottom right is a "SAVE" button.

Figure 5.3: Doctor add page design

Fig 5.3 Description: The above image shows the Doctor Add page of prescription.

5.1.4 Add Patient Page:

Add Patient

Name
Full Name

Phone Date of Birth
Phone mm/dd/yyyy

Blood Group Gender
Select blood Group Select Gender

Address

Close ADD

Patient

Patient L

NAME
Manjur

Zakir

Gender
m

m

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Figure 5.4: Patient add page design

Fig 5.3 Description: The above image shows the Patient Add page of prescription.

5.1.5 Add Medicine:

Add Medicine

Name
Full Name

Medicine Type Strength
Select Medicine Type Select Strength

Generic Supplier
Select Generic Select Supplier

Side Effect

Close ADD

Medicine

Medicine

TYPE
Tab.

Tab.

susp.

ACTION
Edit

Edit

Edit

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Figure 5.5: Medicine Add page design

Fig 5.3 Description: The above image shows the Medicine Add page of prescription.

5.1.6 Add Investigation Page:

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Figure 5.6: Investigation insert page design

Fig 5.3 Description: The above image shows the Investigation Add page of prescription.

5.1.7 Prescription Page:

Dr. Reja Ahmed
MBBS (DMC), MD(Medicine)
Department of Cardiology
National Institute of Cardio Vascular Disease

New Patient *

Code : Patient Name : Age : Gender : Phone No :

Chief Complain : On Examination : Diagnosis : Investigation : Next Follow Up :

Medicine Name	Dose	Duration	Instruction
			<input type="button" value="ADD"/>

Advice :

Save & Print

Figure 5.7: Prescription page design

5.1 Testing

5.2.1 Overview

Testing is the process by which we can evaluate a system or its component(s). Where it meets the certain requirement we expect or reject. This steps outcomes in the actual expectation and difference between the outcomes. In easy to say testing execute a way ¹⁴ in order to identify any kind of problems, errors or missing requirement. on the other hand to the actual expectation or requirement.

5.3.3 Appendix:

5.3.1 User Sign in System:

Sl:	Input:	Clik Btn:	Expectation results:	Pass or fail
1.	Nul, Nul	sign in	displayed Error	Passed
2.	Nul, 12345678	sign in	displayed Error	Passed
3.	12346789, Nul	sign in	displayed lay Error	Passed
4.	12346789, admin	sign in	displayed Error	Passed
5.	12345789, @\$%*&!~(){}[]	sign in	displayed Error	Passed
6.	Admi n, @#\$*&!~(){}[]	sign in	displayed Error	Passed
7.	Adm in, 12345789	sign in	displayed Success	Passed
8.	Adm in, admin1236789	sign in	displayed Success	Passed
9.	Admi n, 1235789admin	sign in	displayed Success	Passed
10.	DMIN, 12456789	sign in	displayed Success	Passed
11.	ADIN, admin123456789	sign in	displayed Success	Passed
12.	AMIN, 123456789admin	sign in	displayed Success	Passed
13.	ADIN, ADMIN	sign in	displayed Success	Passed
14.	admin, ADMIN 12345689	sign in	displayed Success	Passed
15.	admin, 12345678ADMIN	sign in	displayed Success	Passed
16.	ADmin, AdminN	sign in	displayed Success	Passed

Table 4: white box testing of "login system"

5.3.2 Configure Insert Systems:

SL.	Inputs:	Clik Button:	Expect result:	Pass/fail
1.	Nul, Config name	addBtn	displayed Eror	Passed
2.	Nul, Nul, Null, captha	addBtn	displayed Eror	Passed
3.	Nul, Nul, Config name cd,	addBtn	displayed Eror at least 3 character	Passed

5.2 Coding

5.3.1 Restful API for interacting with database and frontend

Controller List

```
<?php  
5  
use Illuminate\Http\Request;  
use Illuminate\Support\Facades\Route;  
use App\Http\Controllers\User\AuthController;  
use App\Http\Controllers\User\UserController;  
use App\Http\Controllers\Common\ChamberController;  
use App\Http\Controllers\Common\DepartmentController;  
use App\Http\Controllers\Common\DesignationController;  
use App\Http\Controllers\Common\DoctorController;  
use App\Http\Controllers\Common\PatientController;  
use App\Http\Controllers\Common\InvestigationController;  
use App\Http\Controllers\Common\GeneralAdviseController;  
use App\Http\Controllers\Common\VisitingFeeController;  
use App\Http\Controllers\Medicine\GenericController;  
use App\Http\Controllers\Medicine\MedicineController;  
use App\Http\Controllers\Medicine\MedicineTypeController;  
use App\Http\Controllers\Medicine\StrengthController;  
use App\Http\Controllers\Medicine\SupplierController;  
use App\Http\Controllers\Medicine\DoseDurationAdviceController;  
use App\Http\Controllers\Prescription\PrescriptionController;
```

Route List

```
// Register Routes
Route::post('/register',[AuthController::class, 'Register']);

// Login Routes
Route::post('/login',[AuthController::class, 'Login']);

// Current User Route
Route::get('/user',[UserController::class, 'User']);

Route::get('/chamberaddress',[ChamberController::class, 'index']);
Route::post('/storechamberaddress',[ChamberController::class, 'storechamber']);

Route::get('/getdepartments',[DepartmentController::class, 'allDepartments']);
Route::post('/storedpartment',[DepartmentController::class, 'storedpartment']);

Route::get('/getdesignations',[DesignationController::class, 'allDesignations']);
Route::post('/storedesignation',[DesignationController::class, 'storedesignation']);

Route::get('/getalldoctors',[DoctorController::class, 'allDoctors']);
Route::post('/addnewdoctor',[DoctorController::class, 'addDoctor']);
Route::post('/updatedoctor/{id}',[DoctorController::class, 'updateDoctor']);

Route::get('/getallpatients',[PatientController::class, 'allPatients']);
Route::get('/searchpatients/{key}',[PatientController::class, 'searchPatients']);
Route::post('/addnewpatient',[PatientController::class, 'addPatient']);
Route::post('/updatepatient/{id}',[PatientController::class, 'updatePatient']);

Route::get('/getGenerics',[GenericController::class, 'allGenerics']);
Route::post('/addgeneric',[GenericController::class, 'addGeneric']);
Route::post('/updategeneric/{id}',[GenericController::class, 'updateGeneric']);

Route::get('/getMedicineTypes',[MedicineTypeController::class, 'allMedicineTypes']);
Route::post('/addMedicineTypes',[MedicineTypeController::class, 'addMedicineTypes']);

Route::post('/updateMedicineTypes/{id}',[MedicineTypeController::class,
'updateMedicineTypes']);
```

```

Route::get('/getStrength',[StrengthController::class, 'allStrength']);
Route::post('/addStrength',[StrengthController::class, 'addStrength']);
Route::post('/updateStrength/{id}',[StrengthController::class, 'updateStrength']);

Route::get('/getsupplier',[SupplierController::class, 'allSupplier']);
Route::post('/addsupplier',[SupplierController::class, 'addSupplier']);
Route::post('/updatesupplier/{id}',[SupplierController::class, 'updateSupplier']);

Route::get('/getMedicines',[MedicineController::class, 'allMedicine']);
Route::post('/AddMedicines',[MedicineController::class, 'addMedicine']);
Route::post('/updateMedicines/{id}',[MedicineController::class, 'updateMedicine']);
Route::get('/searchmedicines/{key}',[MedicineController::class, 'searchMedicines']);

Route::get('/alldoseDurationAdvice',[DoseDurationAdviceController::class, 'allDoseDuration']);
Route::post('/adddoseDurationAdvice',[DoseDurationAdviceController::class,
'addDoseDuration']);

Route::get('/allinvestigation',[InvestigationController::class, 'allInvestigation']);
Route::post('/addinvestigation',[InvestigationController::class, 'addInvestigation']);
Route::post('/updateinvestigation/{id}',[InvestigationController::class, 'updateInvestigation']);
Route::get('/searchinvestigations/{key}',[InvestigationController::class, 'searchInvestigations']);

Route::get('/allgeneralAdvice',[GeneralAdviseController::class, 'allGeneralAdvice']);
Route::post('/addgeneralAdvice',[GeneralAdviseController::class, 'addGeneralAdvice']);
Route::post('/updateadvice/{id}',[GeneralAdviseController::class, 'updateAdvice']);
Route::get('/searchadvices/{key}',[GeneralAdviseController::class, 'searchAdvice']);

Route::get('/allVisitingFees',[VisitingFeeController::class, 'allVisitingFees']);
Route::post('/addVisitingFees',[VisitingFeeController::class, 'addVisitingFees']);
Route::post('/updateVisitingFees/{id}',[VisitingFeeController::class, 'updateVisitingFees']);

Route::post('/createPrescription',[PrescriptionController::class, 'newPrescription']);
Route::get('/allPrescription',[PrescriptionController::class, 'allPrescription']);

```

5.2.2 React Code

```

6   import React, { Component } from 'react'
7   import { BrowserRouter, Route, Switch, Redirect } from "react-router-dom";
8   import AppURL from 'api/AppURL';
9   import AdminLayout from "layouts/Admin.js";
10  import Login from "views/auth/Login";
11  import axios from 'axios';

```

```
12  import { useEffect, useState } from 'react';
13  [13]
14  export default function App() {
15
16    const [user, setUser] = useState([]);
17
18    useEffect(() => {
19      axios.get(AppURL.UserData).then(response => {
20        setUser(response.data);
21      }).catch(error => {
22
23      });
24    }, []);
25  [32]
26    return (
27      <>
28        <BrowserRouter>
29          <Switch>
30            <Route exact path="/" render={(props) => <Login user={user} setUser={setUser} />}
31            <Route exact path="/login" render={(props) => <Login user={user} setUser={setUser} />} />
32            <Route path="/admin" render={(props) => <AdminLayout user={user}
33              setUser={setUser} {...props} />} />
34          </Switch>
35        </BrowserRouter>
36      </>
37    )
38 }
```

Chapter 6

Conclusion and Future Works

6.1 Conclusion

I am glad to present the final software documentation on web based prescription. By this, the patients will get a clear and easy view of medicine names. To improve the efficiency of the prescription, online prescription is very essential. Web based prescription is more effective than a written prescription. Moreover this document can be used by the doctors, patients and also the undergrad students. We have tried our best to make it effective and fully designed documentation. We hope the reader will find it according to.

6.2 Future Works

As this system is developed only for web system and there still lots of features to complete. So there have easy option to include any model or update. Future I will update technology and develop Mobile apps also. Besides more features will release to make it more easy and helpful for doctors. Patient dashboard will also be reach so that they can discuss with doctors with their problems.

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