



Green University of Bangladesh
Faculty of Sciences and Engineering
Semester: (Spring, Year: 2023), B.Sc. in CSE (Day)

Course Title: Integrated Design Project II
Course Code: CSE 406 **Section:** D1

Lab Project Name: Healthcare - Telemedicine Web Application

Student Details

	Name	ID
1.	Aminul Islam Nayan	201002384
2.	Somita Akter	201002223
3.	Md. Rayhan Kabir	201002025

Submission Date : 24 June 2023
Course Teacher's Name : Mr. Palash Roy

Contents

1	Introduction	3
1.1	Introduction	3
1.2	Problem Statement	3
1.3	Aims and Objectives	4
1.4	Motivations	4
1.5	Project Description	5
2	Requirement Analysis and Design	8
2.1	Requirement Analysis	8
2.1.1	Functional Requirement:	8
2.1.2	Non-Functional Requirement:	9
2.2	Tools and Techniques:	9
2.3	Gantt Chart:	10
2.4	Use Case Diagram:	10
2.5	Data Flow Diagram:	11
2.5.1	DFD level 0:	11
2.5.2	DFD level 1:	12
2.6	E-R Diagram and Database Schema:	14
2.7	System Architecture:	15
2.8	Conclusion:	20
3	Interface Design and Implementation	21
3.1	UI UX	21
4	Test Cases	31
4.1	User SignUP	31
4.2	User SignIn	31
4.3	Appointment	32
4.4	Add Doctor	32
4.5	Order Confirmation	33
4.6	Add Drugs	34
5	Conclusion	35
5.1	Summary of the Project	35
5.2	Future Works	35

Chapter 1

1 Introduction

1.1 Introduction

As technology is growing rapidly, the majority of manual systems are being replaced and converted to automated ones. In this situation, we'll design a simple, quick, and seamless appointment system between the doctor and the patient.

There are several issues we deal with on a daily basis. One of the most frequent problems in a person's life is illness. Anyone who feels unwell and wants to see a doctor for a checkup must go to the hospital and wait until the doctor is available. In addition to waiting in line for an appointment, the patient. The patient is not able to learn about the cancellation of the appointment unless and until he or she attends the hospital if the doctor must cancel due to an emergency. Therefore, it's essential to see a doctor for advice anytime we have a condition. Since everyone now has access to the internet, anyone can use the online appointment system to alleviate these issues and patient inconveniences. The goal of this project is to develop a system for managing doctor patient interactions that will assist patients in scheduling appointments and realizing their goals. In this approach, patients may make appointments to book open slots and doctors can manage their booking slots online. This is the method of patient name reservations for counseling. With the help of this technology, patients will be able to arrange appointments with the doctors of their choice at any given time. The system also offers a convenient drug purchasing option, facilitating patients in acquiring medications from the comfort of their own homes.

By using this approach, consumers can quickly find out when the doctor will be offering consultations and schedule appointments whenever they like. People would find it more comfortable to search for their desired doctors if the list is properly classified.

1.2 Problem Statement

The existing process of scheduling doctor appointments and purchasing prescription drugs is often time-consuming, inefficient, and lacks convenience for patients. It requires physical visits to clinics or pharmacies, resulting in long waiting times and limited access to healthcare services. Additionally, patients may face challenges in accessing accurate information about doctors' availability and drug availability, leading to frustration and potential health risks.

Therefore, there is a need to develop an online platform that revolutionizes the process of doctor appointment scheduling and facilitates the purchase of prescription drugs. This platform should

provide a user-friendly interface for patients to easily book appointments with doctors of their choice, based on real-time availability, while ensuring the security and privacy of their personal information. Furthermore, the platform should incorporate a reliable and transparent system for online drug purchase, ensuring the authenticity of medications, proper dosage instructions, and adherence to regulatory guidelines.

By addressing these challenges, the proposed solution aims to enhance the accessibility and convenience of healthcare services, empowering patients to efficiently schedule doctor appointments and securely purchase prescription drugs from the comfort of their homes. This will ultimately lead to improved healthcare outcomes, reduced waiting times, and a seamless experience for patients seeking medical consultations and pharmaceutical services online.

1.3 Aims and Objectives

Aim

The aims of this project are to develop a user-friendly online platform for doctor appointment scheduling and prescription drug purchase. The key objectives include improving accessibility and convenience for patients, ensuring the security and privacy of personal information, establishing a reliable system for online drug purchase, and enhancing the overall user experience through features such as detailed doctor profiles and appointment reminders. The project aims to revolutionize the traditional healthcare process by leveraging technology and innovation to empower patients and improve healthcare outcomes.

Objectives

This project is intended to,

- Provide patients with an easy-to-use, online platform to schedule and manage medical appointments with healthcare providers.
- Provide hassle free home delivery service of purchased drugs.
- Help healthcare providers to manage their schedules more efficiently, reducing wait times and improving productivity.

1.4 Motivations

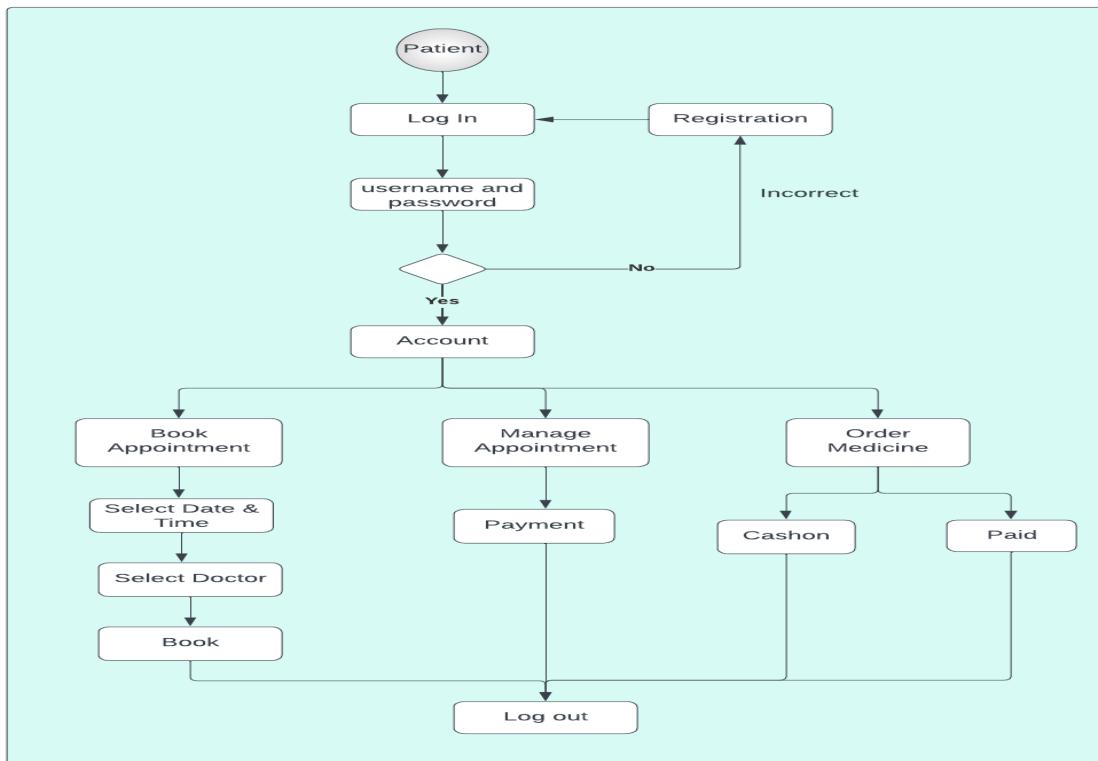
When it comes to buying prescription drugs, patients often face inconveniences and challenges. The traditional process involves visiting physical pharmacies, which can be time-consuming and may not always have the required medications in stock. Moreover, patients may encounter difficulties in obtaining accurate information about drug availability, proper dosage instructions, and potential alternatives. Our motivation stems from the need to provide patients with a reliable and

efficient solution for purchasing prescription drugs online. By offering a platform that ensures the authenticity of medications, provides comprehensive information about dosage and usage, and allows for convenient online ordering, we aim to simplify the drug-buying process and enhance patient satisfaction and safety. So, we have planned to implement a web-based doctor appointment system.

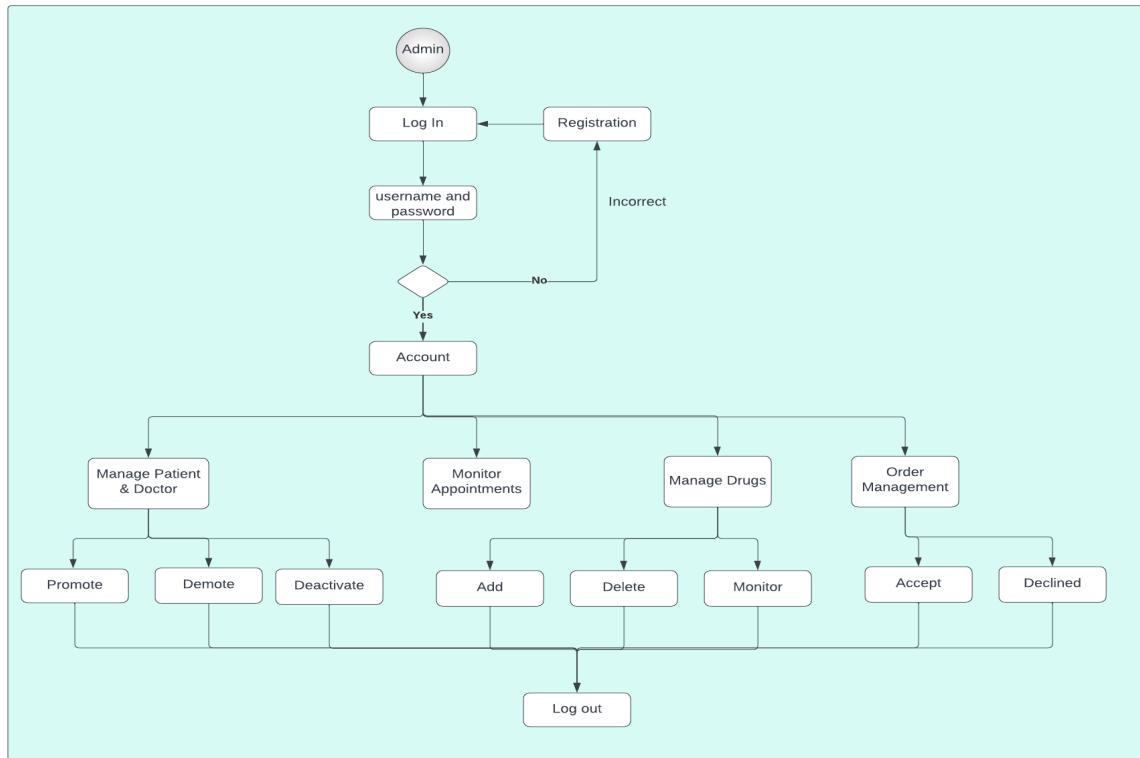
1.5 Project Description

Our Telemedicine - Healthcare Website is an online platform designed to streamline the process of scheduling doctor appointments and purchasing prescription drugs. The website caters to the needs of both users and administrators by offering various functionalities

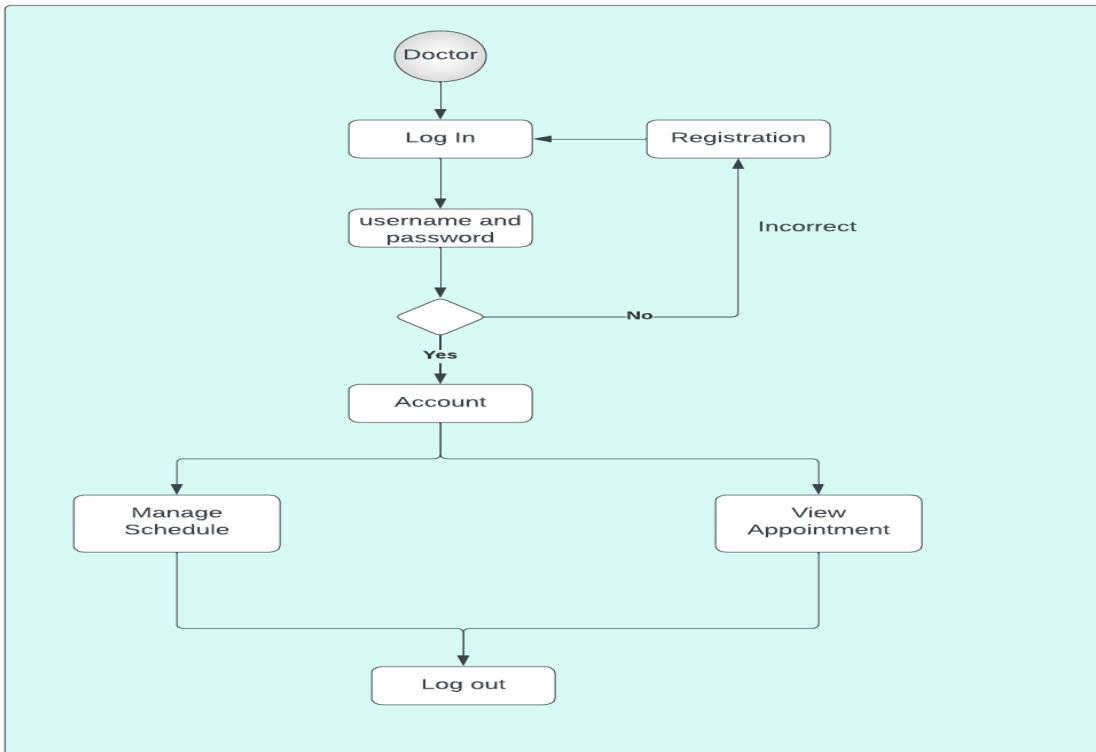
Patient: For users, the website allows them to easily schedule appointments with their preferred doctors at a convenient time. They can browse through available doctors, select a suitable time slot, and make online payments for their appointments. Additionally, users can also purchase prescribed drugs through the website, ensuring a hassle-free experience.



Admin: Administrators have access to comprehensive management tools that enable them to efficiently handle doctor and patient data. They can add and manage doctors, assign administrative privileges or doctor status to users, and create schedules for doctors. Administrators are also responsible for uploading and managing the inventory of drugs available for purchase on the platform.



Doctor: Doctors can access a patient list, allowing them to view and manage their appointments. This feature provides doctors with an organized overview of their patients, ensuring smooth communication and effective patient care.



Chapter 2

2 Requirement Analysis and Design

2.1 Requirement Analysis

A very important component of any project is the gathering and analysis of requirements. Without analysis, data collection, or careful planning, a project will never be successfully completed. A project's delivery date is already specified when we are working on it. Project activities must therefore be planned and carried out in accordance with the delivery deadline. Our project is a web-based online doctor appointment scheduling service. When we first started thinking about this project, analysis and requirement gathering were the biggest challenges we faced. After beginning our investigation, we identify a few key elements that strengthen our project.

2.1.1 Functional Requirement:

Functional requirement describe what a system should do. Functional requirements of our system are explained below.

In this project, a doctor can:

- View dashboard on pending, todays, total appointment list totalpatients
- Get appointment request
- Check previous medical history
- Give appointment

a Patient can:

- View doctors list
- Easily take doctor appointment
- See when his/her expected doctor available
- Able to see categorized doctors department
- Purchase medicine
- Give review on visited doctor

And an Admin can:

- View all registered user list
- Create admin from existing users
- Upload Doctor & Drugs
- Can Manager Doctors Drugs.

2.1.2 Non-Functional Requirement:

- Security: The web app have robust security features, such as encryption, access control, and protection against unauthorized access, to ensure the confidentiality and integrity of patient data.
- Performance: The web app is designed to deliver a high level of performance, with fast load times, quick response times, and minimal downtime.
- Scalability: The web app is able to scale to accommodate an increasing number of users and appointments without compromising performance or functionality.
- Usability: The web app is easy to use, with a simple, intuitive interface that is accessible to users with varying levels of technical expertise.
- Accessibility: The web app is accessible to users with disabilities, in compliance with accessibility standards and regulations.
- Compatibility: The web is compatible with a range of devices and browsers, to ensure that users can access it from their preferred device and location.

2.2 Tools and Techniques:

Whenever we install a software or a hardware for our computer, we should first make ensure that our computer supports the system requirements. We need an internet connection based system hardware's such as computers, laptops, tablets, smart phones and so on. We have used some software tools and platform for development is describe below:

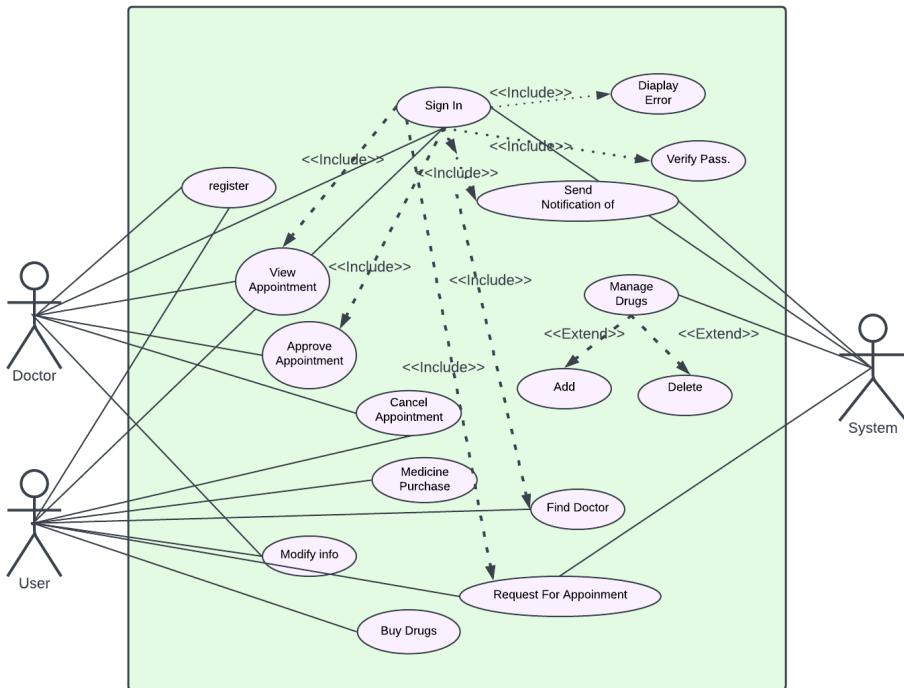
- HTML, Tailwind CSS
- React
- ExpressJS
- MongoDB

2.3 Gantt Chart:

A visual representation of a project schedule that shows the start and end dates of different tasks. Here is a brief description of the Gantt chart for your Doctor Appointment Drugs Buy Website project:

Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Planning															
Design															
Coding															
Testing															
Delivery															

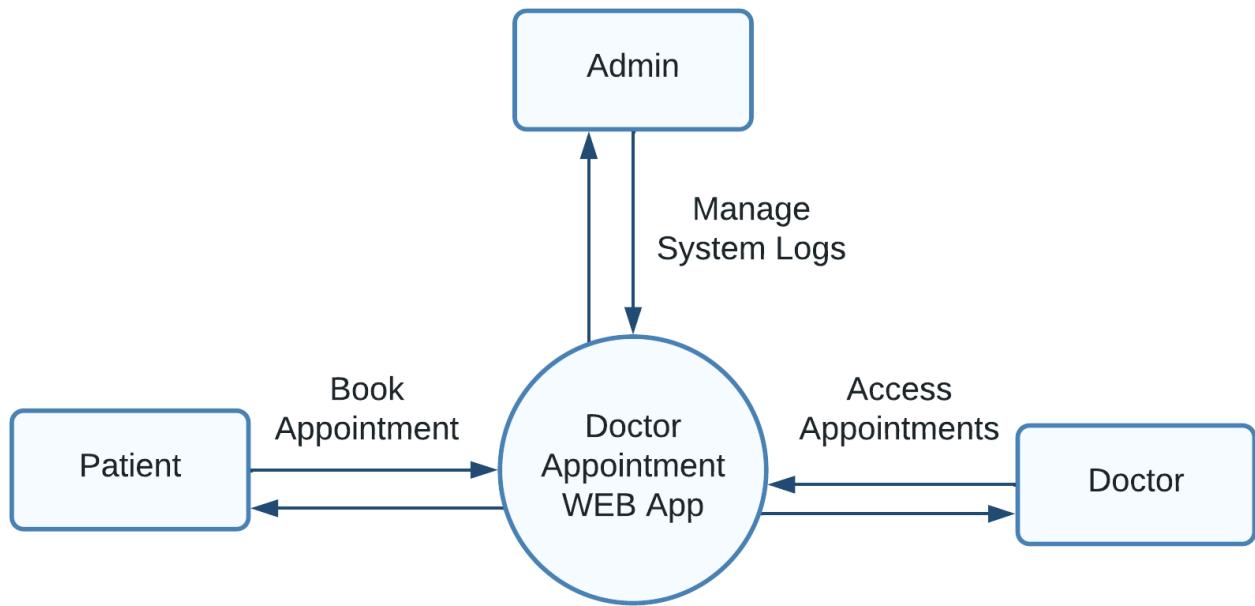
2.4 Use Case Diagram:



2.5 Data Flow Diagram:

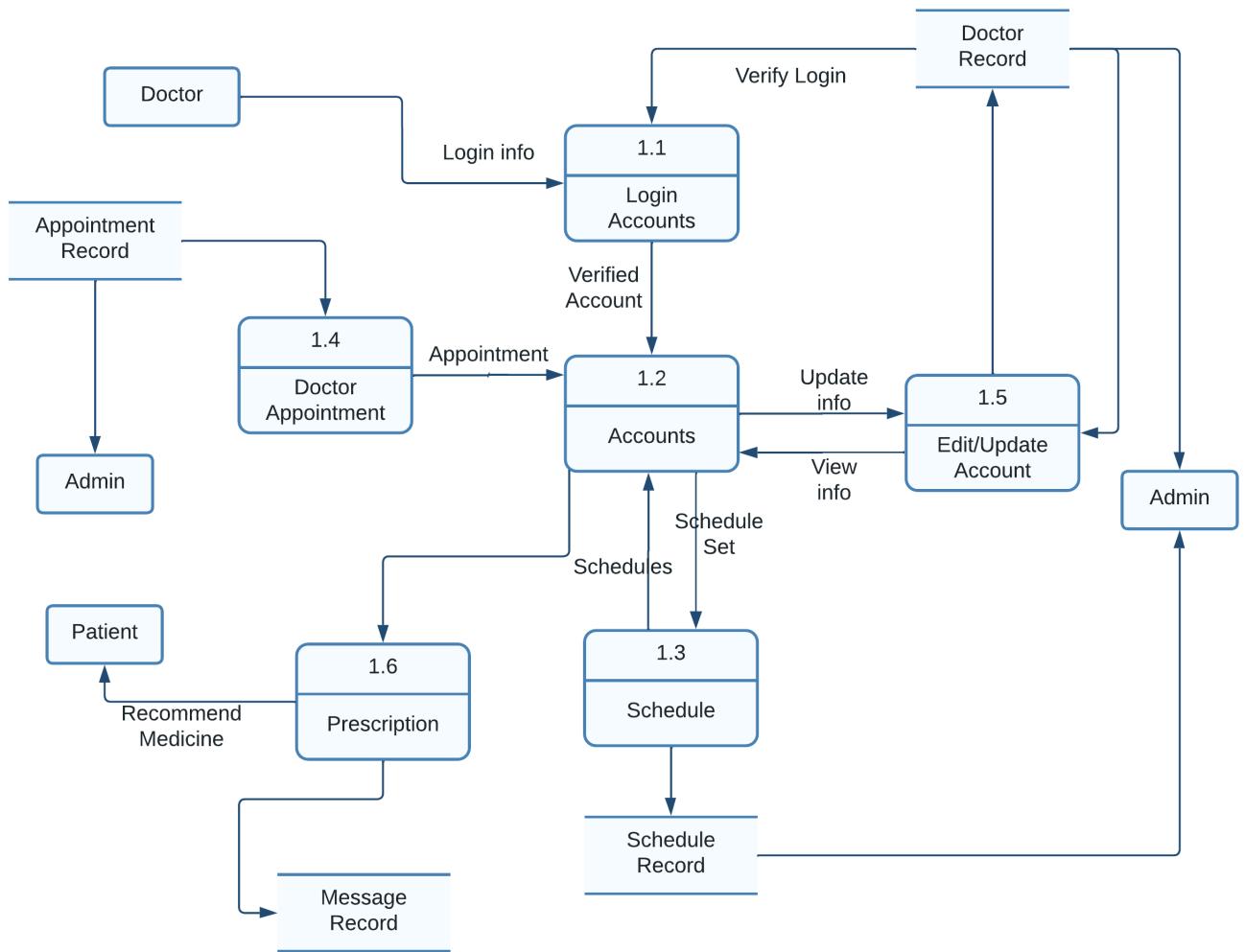
A graphical representation that illustrates how data flows within a system. Here are short descriptions of the DFD components for your Doctor Appointment Drugs Buy Website project:

2.5.1 DFD level 0:



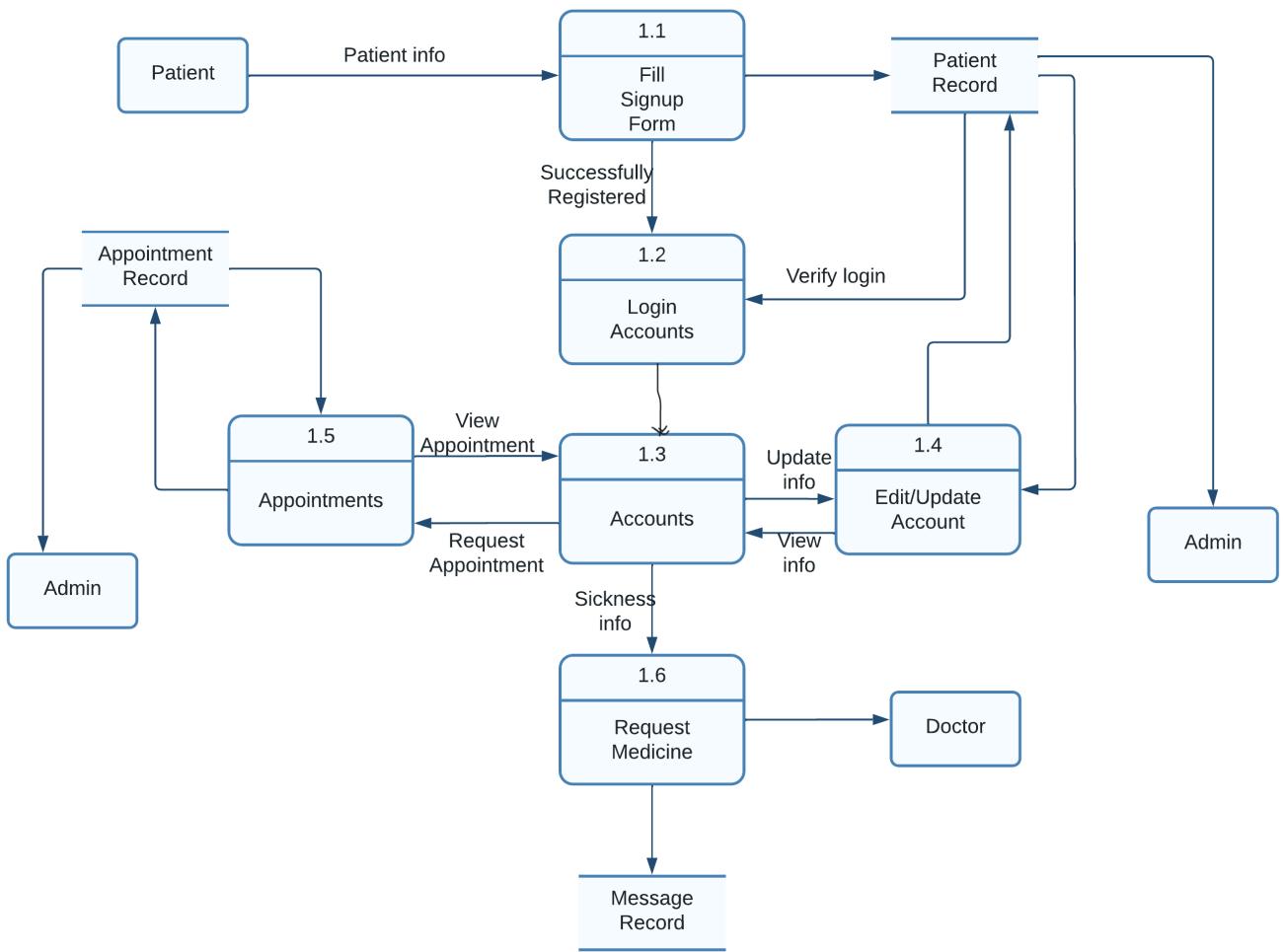
Level 0 DFD

2.5.2 DFD level 1:



Level 1 DFD for Doctor

Level zero DFD is expanded to level one DFD. Figure 1 depicts the doctor's level one DFD. It begins with the login account procedure. After logging in, the account process begins. The admin can access all the updating information that is saved in the data store.

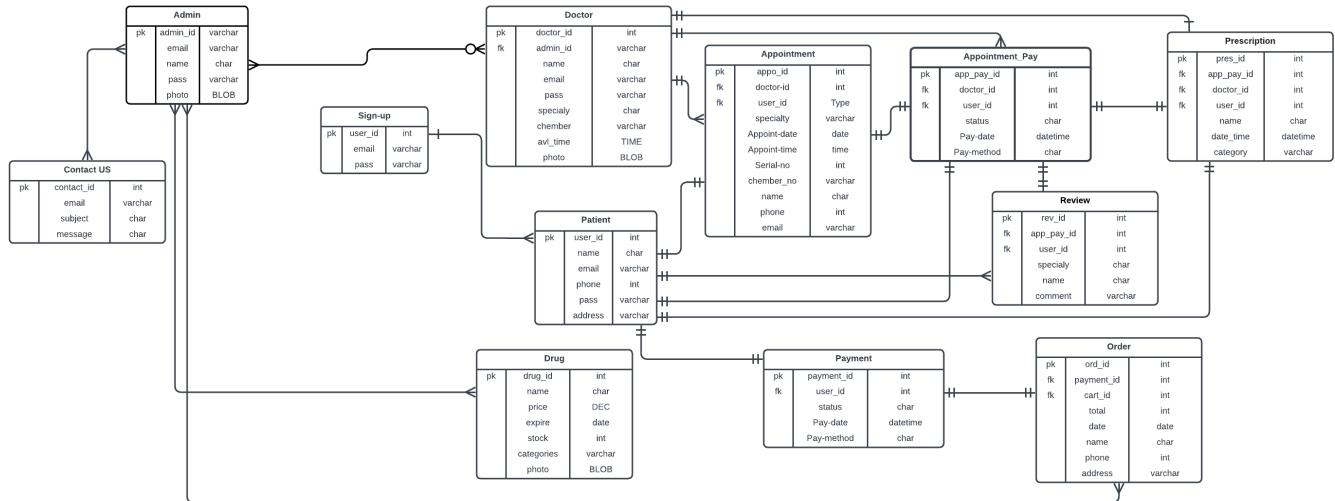


Level 1 DFD for Patient

displays the patient's level one DFD. Fill out the sign-up form process is where it all begins. After signing up, log in to were account. Information is seen and retrieved from a data repository.

2.6 E-R Diagram and Database Schema:

E-R Diagram (Entity-Relationship Diagram) and Database Schema are two key components of designing and organizing the database structure for your Doctor Appointment Drugs Buy Website project. Here are short descriptions of each:



Admin (admin_id, email, name, pass, photo)

Doctor (doctor_id, admin_id, name, email, pass, specialty, chember, avl_time, photo)

Patient (user_id, name, email, phone, pass, address)

Appointment (appo_id, doctor-id, user_id, specialty, Appoint-date, Appoint-time, Serial-no, chember_no, name, phone, email)

Appointment_Pay (app_pay_id, doctor_id, user_id, status, Pay- date, Pay-method)

Prescription (pres_id, app_pay_id,doctor_id, user_id, name, date_time, category)

Drug (drug_id, name, price, expire, stock, categories, photo)

Order (ord_id, payment_id, cart_id, total, date, name, phone, address)

Payment (payment_id, cart_id, user_id, status, Pay-date, Pay-method)

Contact US (contact_id, email, subject, message)

Review (rev_id, app_pay_id, user_id, specialty, name, comment)

ManyToMany:

AdminContact (admin_id, contact_id, name, email, subject, message)

AdminDrugs(admin_id, drug_id, name, price, stock, expire, category)

AdminOrder(admin_id, ord_id, total, date, name, phone, address)

2.7 System Architecture:

High-Level Design of The Healthcare

HLD provides an overview of the system architecture. Here it covers main functionality of any project. By looking at a short overview it is easy to understand the purpose and goals of a project. In Healthcare system our main goal is to provide sophisticated flexible in traditional management. Highlight features are:

Get Appointment: Patience can get appointment in his convince time. No more waiting time which gives us nothing!

Buy Medicine: Now it's easy to buy drugs from home as we do for grocery items.

Administrator Action: System admin can organize the system in a way to gives best experience for both doctor & patient end.

Doctor Action: To initialize doctors in online world. We also give doctors the ability to handle his appointment, check patients' activity. And can upload prescription.

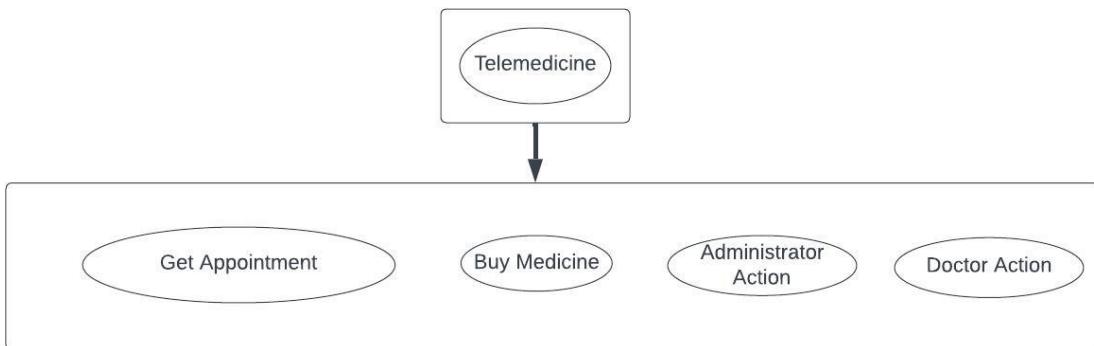


Figure 1: Fig 0: High-Level Design

Low-Level Design of The Healthcare Under the roof of the High-Level Design, LLD provides a more detailed description of the individual components of the system. It covers component's purpose, flow of functionality, implementation details & other details modules, and their internal workings. To view all four HLD in a systematic way we've spilt each of modules in its subsection.

1. Get Appointment:

- **Login**

To get an appointment users must login with credentials. Each login, input data will validate by database. Proper email formation, password string will check in each login. If pass system verification only then user can login to its personal dashboard. Otherwise, the user will get denied.

- **Appointment**

After Validate login by database, patient can go further for appointment process. Users choose Date from the calendar. Then the next module, which is Doctor Selection will be triggered.

- **Doctor Selection**

The Administrator's given specialist category wise doctors list will be shown with available time frame, Chamber serial No.

- **Booking**

In Booking process patient gives user details payments for complete appointment. User details could be patients family member any known relative. Payment will be verified by an automated payment gateway. After completed booking, data will be forward to doctor.

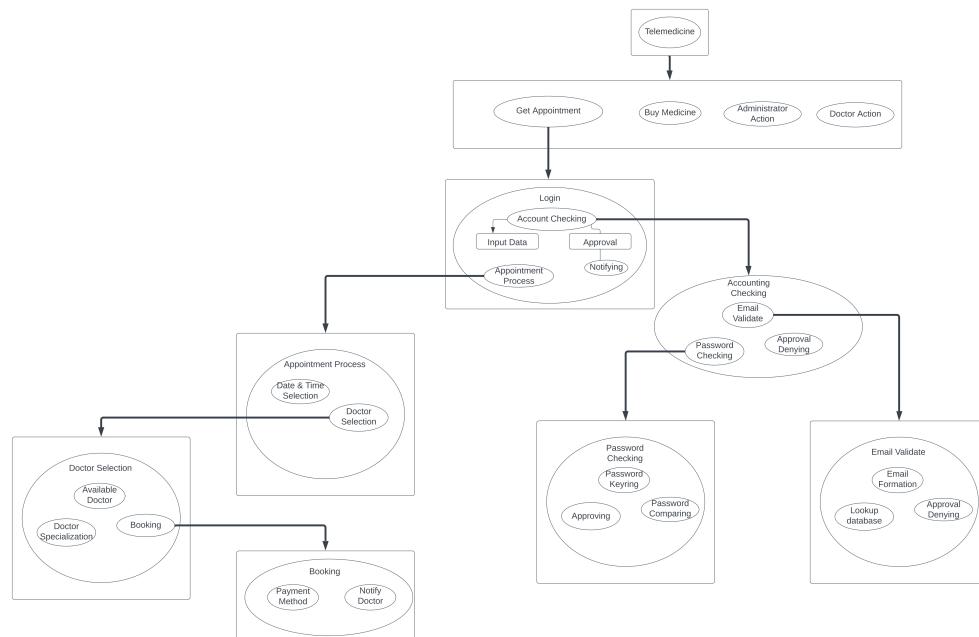


Figure 2: Fig 2: Low-Level Design

2. Buy Medicine:

- **Login**

To order Medicine users must login with credentials. Each login, input data will validate by database. Proper email formation, password string will check in each login. If pass system verification only then user can login to its personal dashboard. Otherwise, the user will get denied.

- **Transaction Process**

After Validate login by database, user will be able to buy drugs. Buy module will calculate overall selected drugs price. Shipping address payment will be the result of order confirmation. • **Payment**

Payment could be made by either cash on delivery or advance payment. Order will be processed by admin panel. He/She has the right to cancel the order at any time.

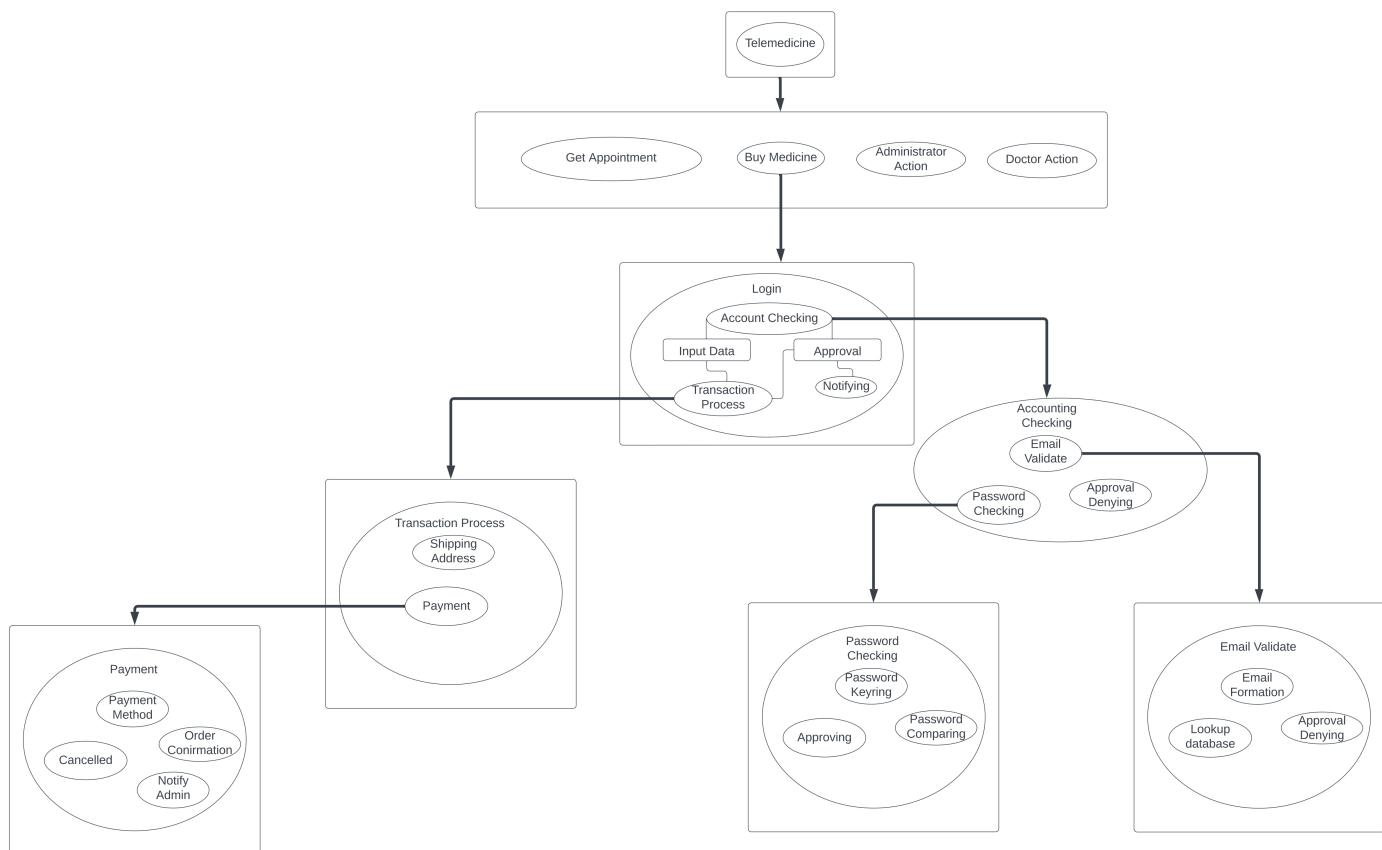


Figure 3: Fig 3: Low-Level Design

3. Administrator Action:

- **Login**

To hit each action by admin he must be logged with credentials. Each login, input data will validate by database. Proper email formation, password string will check in each login. If pass system verification only then user can login to its personal dashboard. Otherwise, the user will get denied.

- **Manage Drugs**

Only Admin will have the ability to add drugs, Manage drugs delete drugs from it's inventory product page.

- **Manage Doctors**

New Doctor profile can be created by admin, If need doctor can be promoted to Admin also. Overall, it's possible to manager maintain, delete doctor profile from admin end.

- **Manage Orders**

Any order confirmed by user will directly notify to admin. He can initialize order to it's destination or can cancel the order.

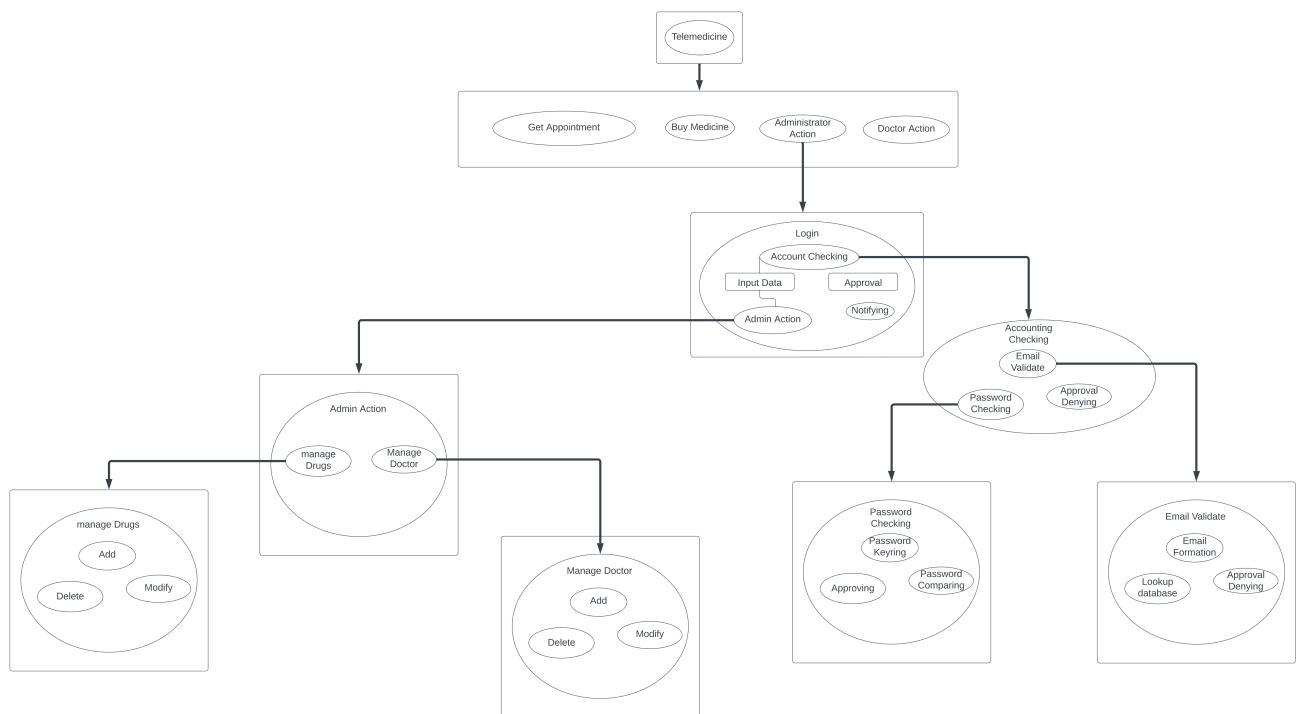


Figure 4: Fig 2: Low-Level Design

4. Doctor Action:

- **Login**

To manage the schedule get access patient information he must be logged with credentials. Each login, input data will validate by database. Proper email formation, password string will check in each login. If pass system verification only then user can login to its personal dashboard. Otherwise, the user will get denied.

- **Check Schedule**

Every appointment by patient directly hit on the doctor profile. He can check number of users who will visit his desk.

- **Upload Prescription**

Visited patient's prescription can be uploaded by the Doctor of Its own.

- **Manage Own Schedule**

When Doctor is unavailable to give service, he can turn off his schedule. So that it will be inaccessible to end user.

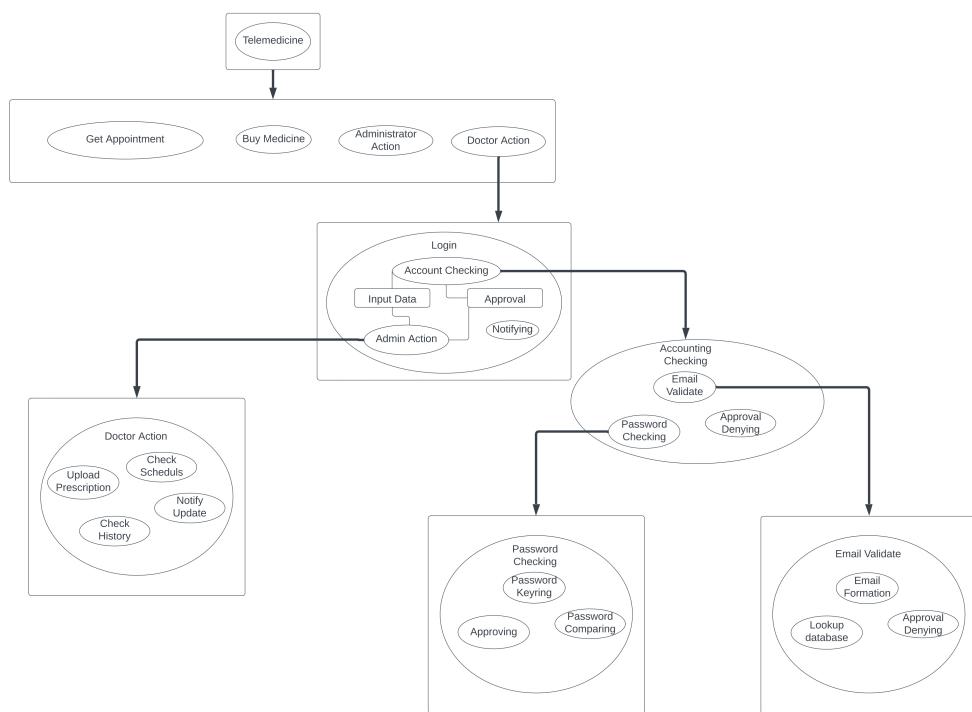


Figure 5: Fig 4: Low-Level Design

2.8 Conclusion:

Chapter 2 of the project focuses on Requirement Analysis and Design. It covers functional and non-functional requirements, tools and techniques used for analysis, Gantt chart, use case diagram, data flow diagram (DFD), E-R diagram and database schema, and system architecture. It analyzes the project's objectives and translates them into a well-defined system. The chapter provides insights into various aspects such as requirements gathering, system design, project scheduling, user interactions, data flow, database structure, and system components. It lays the foundation for the project and ensures a comprehensive understanding of the project scope for the development of the Doctor Appointment Drugs Buy Website.

Chapter 3

3 Interface Design and Implementation

3.1 UI UX

Healthcare – Telemedicine web app is separated into 4 categories for usages

Public Access:

On Landing Page:

By visiting the home page visitors can see navigation services we provide which will help to understand in short the purpose of the site use case. Here Navigation menu covers:

Appointment: to make appointment

Doctor: List of professional doctors who gives treatment

Drugs: Sets of drugs to purchase

Login: Used by Doctor Patient to make communicate to get other services which need to verify the user.

Website banner is used for promotional message or trigger main service which we provide in that case appointment. Next section comes with services. It shows brief information on what particular service can be found from dentist. Our Doctors which An overview of a doctor which covers Doctor Name, Specialty, Available Time.

Last two section for patient review which shows the satisfaction of any patient reviewed by patient portal. Then To know further information patient may contact using form submission. At last on the footer section it shows link up services Address of the hospital.

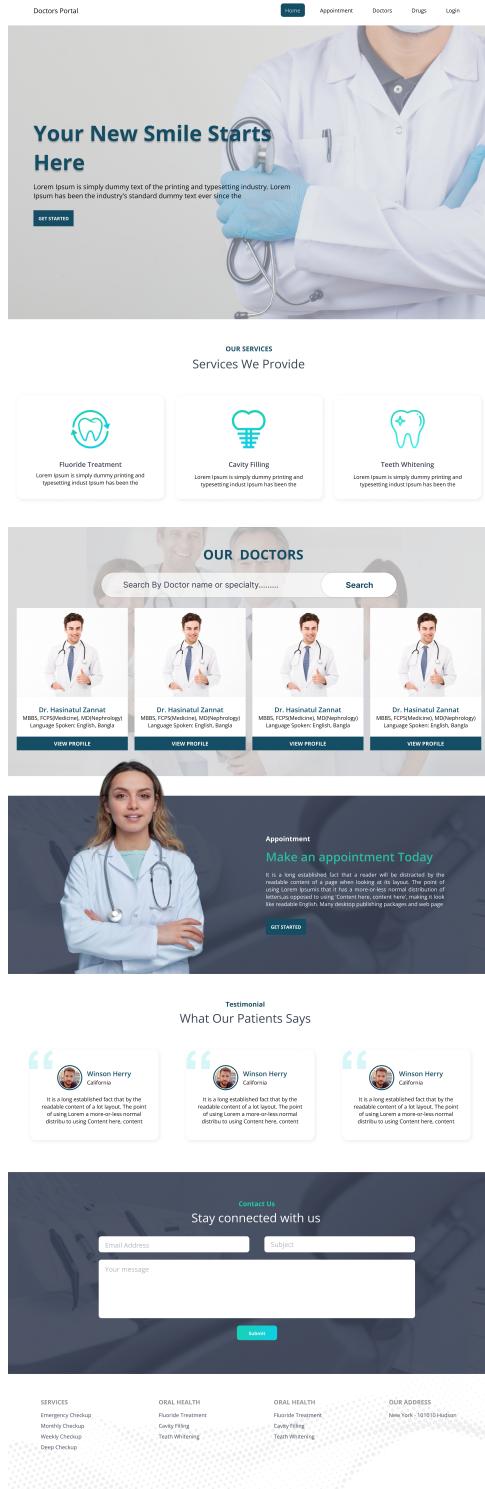


Figure 6: Landing page

On Drugs Page: Patient can buy drugs from this page. It cover drugs name, category, price expire date. If need patient can also upload their prescription. According to the prescription, the pharmacy department will process the delivery of the given prescription.

The screenshot shows a web application interface for buying medicine. At the top, there is a navigation bar with links: 'Doctors Portal', 'Home', 'Appointment', 'Doctors', 'Drugs' (which is highlighted in blue), and 'Login'. Below the navigation bar is a large banner with a teal background. The banner features several white and teal capsules floating in the air. Overlaid on the banner is the text 'Your New Smile Starts Here' in a bold, sans-serif font. Below this, there is a small amount of placeholder text: 'Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the'. A dark blue button labeled 'GET STARTED' is positioned at the bottom left of the banner. In the center of the page, there is a section titled 'BUY MEDICINE' with a teal header. Below this, there is a button labeled 'Upload prescription' with a 'Upload Now' button underneath it. In the background, there is a faint, semi-transparent image of three healthcare professionals (two women and one man) smiling. At the bottom of the page, there is a grid of five product cards, each showing a small image of a medicine box or blister pack, the drug name, its category, and its price. The products listed are: Sergel 20 Capsule (\$6.72), Monas 10 Capsule (\$4.62), Clopid 75 Capsule (\$10.72), Sergel 20 Capsule (\$6.72), and Bisocor 2.5 Capsule (\$3.52). Each card also includes a code 'EXP080525'.

Product	Category	Price
Sergel 20	Capsule	\$6.72
Monas 10	Capsule	\$4.62
Clopid 75	Capsule	\$10.72
Sergel 20	Capsule	\$6.72
Bisocor 2.5	Capsule	\$3.52

Figure 7: Drug page

On Doctors Page: Some doctors previews will be visible here with their basic information. Patient can also search doctor by specialty or Doctor name.

The screenshot displays a medical website's doctor page. At the top, there is a navigation bar with links for Home, Appointment, Doctors (which is highlighted in a red box), Drugs, and Login. Below the navigation is a large banner featuring a doctor in a white coat and blue gloves holding a stethoscope. The banner has the text "Your New Smile Starts Here" and a "GET STARTED" button. Below the banner is a section titled "OUR DOCTORS" with a search bar. Four doctor profiles are shown in a grid, each with a photo, name, qualifications, and language spoken. Below the grid are sections for services, oral health, and address, along with a copyright notice.

OUR DOCTORS

Search By Doctor name or specialty.....

Dr. Hasinatul Zannat MBBS, FCPS(Medicine), MD(Nephrology) Language Spoken: English, Bangla VIEW PROFILE	Dr. Hasinatul Zannat MBBS, FCPS(Medicine), MD(Nephrology) Language Spoken: English, Bangla VIEW PROFILE	Dr. Hasinatul Zannat MBBS, FCPS(Medicine), MD(Nephrology) Language Spoken: English, Bangla VIEW PROFILE	Dr. Hasinatul Zannat MBBS, FCPS(Medicine), MD(Nephrology) Language Spoken: English, Bangla VIEW PROFILE
--	--	--	--

SERVICES

- Emergency Checkup
- Monthly Checkup
- Weekly Checkup
- Deep Checkup

ORAL HEALTH

- Fluoride Treatment
- Cavity Filling
- Tooth Whitening

ORAL HEALTH

- Fluoride Treatment
- Cavity Filling
- Tooth Whitening

OUR ADDRESS

New York - 101010 Hudson

Copyright 2023 All Rights Reserved

Figure 8: Doctor page

On Appointment Page: It is an Appointment page. A patient can take a doctor appointment and available services. Patients can select date to view available services on this date. After choosing services, available doctors on this date with consultation time will be shown here.

Finally a popup will estimate serial number, Counter number available time. By Given customer details appointment will be done. These information will be visible both doctor patient portal.

Doctors Appointment
Home Appointment Doctors Drugs Dashboard Sign Out

June 2023						
SU	MO	TU	WE	TH	FR	SA
1	2	3				
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	



Available Services on: Jun 24, 2023
Please select a service

Cosmetic Dentistry
08.00 AM - 08.30 AM
16 Spaces Available
\$90

BOOK APPOINTMENT

Teeth Cleaning
08.00 AM - 08.30 AM
14 Spaces Available
\$90

BOOK APPOINTMENT

Teeth Orthodontics
08.00 AM - 08.30 AM
12 Spaces Available
\$90

BOOK APPOINTMENT

Teeth Cleaning

Jun 24, 2023

08.00 AM - 08.30 AM

User

user@gmail.com

Phone Number

SUBMIT

On Signup Login Page: New Patient need to signup first to take services. The signup process can be go through google also. To do the purchases appointment, view appointment both doctor patient need to login from that page.

The image shows two wireframe screens side-by-side. The left screen is titled "Sign Up" and contains fields for Name, Email, Password, and a "Forgot Password?" link. It has a "LOGIN" button at the bottom. Below it is a link to "New to Doctors Portal? Create new account". A horizontal line with the word "OR" is followed by a "CONTINUE WITH GOOGLE" button. The right screen is titled "Login" and contains fields for Email and Password, along with a "Forgot Password?" link. It has a "LOGIN" button at the bottom. Below it is a link to "New to Doctors Portal? Create new account". A horizontal line with the word "OR" is followed by a "CONTINUE WITH GOOGLE" button.

Figure 9: Drug page

Patient Panel:

My appointment menu:

Here it shows the information of patients such as- name, appointment date, appointment time or schedule, After the payment transaction id will be replace by pay button.

The image shows a screenshot of the Patient Panel. On the left, there is a sidebar with tabs for "My Appointments" (which is active), "My Reviews", and "My History". The main content area is titled "My Appointments : 06". It displays a table with columns: NAME, DATE, TIME, TREATMENT, and PAYMENT. The PAYMENT column shows a "Paid" status with a transaction ID and a "Pay" button. The table lists six patients: Wade Warren, Arlene McCoy, Albert Flores, Eleanor Pena, Jerome Bell, Cameron Williamson, and Courtney Henry, each with their respective appointment details and a "Pay" button.

	NAME	DATE	TIME	TREATMENT	PAYMENT
01	Wade Warren	1/31/14	06:41 pm	Cavity Protection	Paid Id : dfadfljaksdjf24sdfds
01	Arlene McCoy	10/28/12	02:30 pm	Cavity Protection	Pay
01	Albert Flores	9/23/16	10:32 pm	Cavity Protection	Pay
01	Eleanor Pena	8/30/14	10:41 pm	Cavity Protection	Pay
01	Jerome Bell	8/21/15	05:36 pm	Cavity Protection	Pay
01	Cameron Williamson	9/4/12	04:15 am	Cavity Protection	Pay
01	Courtney Henry	7/27/13	07:40 am	Cavity Protection	Pay

Figure 10: Patient Panel(Appointment menu)

Doctor Panel:

Appointment menu:

On this panel doctor can view appointment filtering by specific date and can be able to upload the prescription which was shown on patient panel previously.

Doctors Portal

Home Appointment Doctors Drugs Login

My Appointments My Appointment MAY 10, 2023

	NAME	SERVICE
1	John Doe	Teeth Orthodontics
2	John Doe	Teeth Orthodontics
3	John Doe	Teeth Orthodontics
4	John Doe	Teeth Orthodontics

April 2023 < >

SU	MO	TU	WE	TH	FR	SA
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

Doctors Portal

Home About Appointment Reviews Contact Us Login

My Appointments My Appointment MAY 10, 2023

	NAME	SERVICE	TIME	PREScription
1	John Doe	Teeth Orthodontics	08.30 AM - 09.00 AM	<button>Upload</button>
2	John Doe	Teeth Orthodontics	08.30 AM - 09.00 AM	<button>Upload</button>
3	John Doe	Teeth Orthodontics	08.30 AM - 09.00 AM	<button>Upload</button>
4	John Doe	Teeth Orthodontics	08.30 AM - 09.00 AM	<button>Upload</button>

Figure 11: Doctor Panel(Appointment menu)

Admin Panel:

Manage User Menu:

Super power admin view all the users who are signed up. If need admin can promote any user an admin or may remove user. If did that user may not able to sign in again.

The screenshot shows the 'All users' section of the Admin Panel. On the left, there's a sidebar with links: My Appointment, All Users, Add A Doctor, Manage Doctors, Add Durgs, Manage Drugs. The main area has a header 'All users' and a search bar 'search by name or email'. Below is a table with columns: SERIAL NO., NAME, EMAIL, ADMIN, and DOCTOR. The data is as follows:

SERIAL NO.	NAME	EMAIL	ADMIN	DOCTOR
1	nayan	nayan@gmail.com	<button>MAKE ADMIN</button>	
2	arif	arif@gmail.com		<button>MAKE DOCTOR</button>
3	Momin Khan	momin@gmail.com	<button>MAKE ADMIN</button>	
4	khan	khan@gmail.com	<button>MAKE ADMIN</button>	
5	joyjoy	joyjoy@gmail.com	<button>MAKE ADMIN</button>	
6	manik	manik@gmail.com		<button>MAKE DOCTOR</button>
7	rocky	rocky@gmail.com		<button>MAKE DOCTOR</button>

Figure 12: Admin Panel(Manage User)

Add Doctor menu:

Next menu is to add doctor on the site. Doctor can be added by Name, Email, Chamber No, Specialty, Available time doctors profile picture.

The screenshot shows the 'Add A Doctor' form. On the left, there's a sidebar with links: My Appointment, All Users, Add A Doctor, Manage Doctors, Add Durgs, Manage Drugs. The main area has a header 'Add A Doctor' and fields for Name (with placeholder 'Enter Your Name'), Email (with placeholder 'Enter Your Email'), Specialty (dropdown menu showing 'Cosmetic Dentistry'), Available time (dropdown menu showing '08.00 AM - 12.00 PM'), Rate (text input placeholder 'Enter Your Rate'), and Photo (file upload button 'Choose File' with message 'No file chosen'). At the bottom is a large blue 'ADD DOCTOR' button.

Figure 13: Admin Panel(Add Doctor)

Manage Doctor menu:

Like the users doctors can be removed by the admin also.

AVATAR	NAME	SPECIALITY	ACTION
01	Jacob Jones	Teeth Cleaning	<button>Delete</button>
02	Bessie Cooper	Teeth Cleaning	<button>Delete</button>
03	Kristin Watson	Teeth Cleaning	<button>Delete</button>
04	Courtney Henry	Teeth Cleaning	<button>Delete</button>
05	Brooklyn Simmons	Teeth Cleaning	<button>Delete</button>
06	Jane Cooper	Teeth Cleaning	<button>Delete</button>
07	Arlene McCoy	Teeth Cleaning	<button>Delete</button>
08	Wade Warren	Teeth Cleaning	<button>Delete</button>

Figure 14: Admin Panel(ManageDoctor)

Drug Upload menu:

On drugs upload section, To add anew drug on the site Admin need to Select Drug name, Price, Expire Date, Stock, Categories drug image.

Add Drugs

Name:

Price:

Expire date:

Stock:

Categories:

Upload Drug Photo:

Add

Figure 15: Admin Panel(Drug Upload)

Manage Drug menu:

On drugs manager section uploaded drugs overview will be visible here. Such as Drug name, Picture, stock, expire date delete option which will erase the drugs data from the website.

The screenshot shows the 'Admin Portal' interface with a navigation bar at the top. The 'Drugs' option is selected in the sidebar. The main content area is titled 'Manage Drugs' and displays a table of eight drugs. Each row contains the drug's ID, a small image of the drug bottle ('AVATAR'), the drug's name ('NAME'), its current stock level ('Stock'), its expiration date ('Expire'), and a red 'Delete' button.

	AVATAR	NAME	Stock	Expire	ACTION
01		Sergel 20	10	EXP030225	<button>Delete</button>
02		Clopid 75	205	EXP030225	<button>Delete</button>
03		Monas 10	26	EXP030225	<button>Delete</button>
04		Bisocor 2.5	105	EXP030225	<button>Delete</button>
05		Bizoran 5/40	90	EXP030225	<button>Delete</button>
06		Exforge 5/160	78	EXP030225	<button>Delete</button>
07		Pantonix 20	78	EXP030225	<button>Delete</button>
08		Azyth 500	90	EXP030225	<button>Delete</button>

Figure 16: Admin Panel(Manage Drug)

Chapter 4

4 Test Cases

4.1 User SignUP

To do any Appointment, buy drugs, Manage Drugs, Patient, Doctor. Doctor, Patient Admin must signed in. Before that, they must Signed Up. Here's the Test Cases for validating SignUp form:
Name: Name Should be under 65-90, 97-122 ASCII value it should be filled up

Email: Email should have proper domain, TLD name after @ it should be filled up

Password: Password will be combination of Capital Letter, Small Letter, Special character digit. It should be minimum of 8 character length @ it should be filled up

User SignUP						
Name	Email	Password	Expected Results	Actual Result	Remark	
Molla Mia	mollamia@mollamia.com	hozoboro\$1424	Name: 1. Character must be under 65-90, 97-122 ASCII value 2. Each of starting word should be in Uppercamel case 3. Character length must be 50 character limit 4. Name filled should be filled up.	Matched	✓	
Molla Mia47\$	mollamia@mollamia.com	hozoboro\$1424		Name input should be filled	✓	
Molla Mia	mollamiamollamia.com	hozoboro\$1424		Name shouldn't contain number o	✓	
Molla Mia	mollamia@com	hozoboro\$1424		Email Should contain @	✓	
Molla Mia	mollamia@mollamia	hozoboro\$1424		Email should contain Domain Nar	✓	
Molla Mia	mollamia@mollamia	hozoboro\$1424		Email should contain TLD Name	✓	
Molla Mia	mollamia@mollamia.com	hozoboro\$1424	Email: 1. Must have @ symbol 2. Must have domain name after @ 3.Top-level domain like .com, .net , .org etc. 4. Email filled should be filled up.	Email should filledup	✓	
Molla Mia	mollamia@mollamia.com	hozoboro\$1424		Password should contain minimur	✓	
Molla Mia	mollamia@mollamia.com	hozoborolqerqw		Password should contain special	✓	
Molla Mia	mollamia@mollamia.com	hozoboro\$1424		Password field should be filled Up	✓	
Molla Mia	mollamia@mollamia.com	hozoboro\$1424	Password: 1. Should have minimum of 6 character length 2. Should contain special character & number 3. Password filled should be filled up.	On Password Special character n		

4.2 User SignIn

Authorize users specific action can taken by login with credentials.

Login As: Both Patient, Doctor Admin can be login using same login panel. information must match with database.

Email: Email should have proper domain, TLD name after @, must be filled up.

Password: Password must match corresponding input mail from databse.

SignIn						
Login As	Email	Password	Expected Results	Actual Result	Remark	
Admin	mollamia@mollamia.com	hozoboro\$1424	Email: 1. Must have @ symbol 2. Must have domain name after @ 3.Top-level domain like .com, .net , .org etc. 4. Email filled should be filled up.	Matched	✓	
Patient	mollamia@mollamia.com	hozoboro\$1424		Matched	✓	
Doctor	mollamia@mollamia.com	hozoboro\$1424		No User Found in this mail	✓	
Molla Mia	mollamiamollamia.com	hozoboro\$1424		Incorrect Mail format	✓	
Molla Mia	mollamia@com	hozoboro\$1424		Mail domain name missing	✓	
Molla Mia	mollamia@mollamia	hozoboro\$1424		Mail TLD name missing	✓	
Molla Mia	mollamia@mollamia.com	hozoboro\$1424	Password: 1. Should have minimum of 6 character length 2. Should contain special character & number 3. Password filled should be filled up.	Email input required	✓	
Molla Mia	mollamia@mollamia.com	ho\$4		Password doesn't match	✓	
Molla Mia	mollamia@mollamia.com			Password field is required	✓	

4.3 Appointment

Authorize users can make appointment login with credentials.

Date: Default date will taken by system, user can change from his preferable time from calendar.

Time: Corresponding Doctor available 12-hour clock format time will be shown here

Serial No: Each appointment serial number will be increase, unique serial number will assign to each user.

Chember No: Integer Chember no will be auto loaded for corresponding .

Name: Will auto-load from database

Email: Will auto-load from database

Phone: Have in total 11 digit number number pattern should start on 01xxxxxxxxx

Appointment Booking									
Date	Time	Serial No	Chember	Name	Phone	Email	Expected Results	Actual Result	Remark
30 May 2023	10:05 am - 11:30 #1786145 #48		Ratul Sign	01578897845	ratul488@gmail.com	Date: 1. Date should be selected New 8 Previous day can't be click	Matched	✓	
Previous Day	10:11 am - 11:30 #1786144 #45		Faruk Khan	01578879485	faruk@gmail.com	1. Date should be selected New 8 Previous day can't be click	Matched	✓	
10 June 2023	10:11 am - 11:30 #1786144 #18		Molla Mia	01578879485	molla@gmail.com	1. Date should be selected New 8 Previous day can't be click	Matched	✓	
27 May 2023	10:11 am - 11:30 #1786144 #18		Yusuf hasan	015788	gdf@gmail.com	Time: 1. On Modal page time should au	Incorrect Phone number for	✓	
11 May 2023	10:05 am - 11:30 #1786145 #95		Ratul Sign	GDFRG@JH		1. On Modal page time should au	Email filed should autofill	✓	
Today	10:11 am - 11:30 #1786144 #45		Ratul Sign	01578879485	faruk@gmail.com	Serial No: 1. Serial should be unique	Serial No should be unique	✓	
10 June 2023	10:05 am - 11:30 #1786139 #95		Ratul Sign	GDFRG@JH		1. Serial should be increase in mz	Invalid phone number		
11 May 2023	10:05 am - 11:30 #1786137 #48		Molla Mia	01578891-45	ratul488@gmail.com	2. Duplicate serial number not ac	Special character doesn't s	✓	
Today	10:11 am - 11:30 #1786136 #45					3. Serial number will be numeric f	Name should auto fill	✓	
10 June 2023	10:11 am - 11:30 #1786135		Ratul Sign	01578879485	molla@gmail.com	Chember: 1. Chember No should auto load	Chember No should auto fl	✓	
27 May 2023	10:11 am - 11:30 #1786134 #18		Ratul Sign	015788	gdf@gmail.com	2. Serial number will be numeric f	Serial No should be in incre	✓	
						Name: 1. Name should auto load			
						Phone: 1. Should have minimum of 11 dg			
						Email: 1. Should auto load			

4.4 Add Doctor

To make appointment from a doctor. An Doctor Profile must be created.

Doctor Name: Name Should be under 65-90, 97-122 ASCII value it should be filled up

Category: From prefilled drop-down menu, doctor category need to be selected. **Profile:** For doctor picture, it will take only jpg, png file format

Chember No: Integer Chember No should be filled up.

Time: Corresponding Doctor available 12-hour clock format time should filled up

Add Doctor					
Doctor Name	Category	Profile	Chember	Time	Expected Results
Dr. Alfred Blanch	General practitioner	https://image.com #48		10:05 am - 11:30	Name:
Dr. Addie Tiotuic	Medical Geneticists	https://image.com #45		10:11 am - 11:30	1. Character must be under 65-90, 97-122 ASCII value 2. Each of starting word should be in Uppercamel case
Dr. Emanuel Gu	Nephrologists	https://image.com #41		10:11 am - 11:30	3. Character length must be 50 character limit 4. Name filled should be filled up.
Dr. William Lam	Obstetricians and Gynecologists	https://image.com #49		10:11 am - 11:30	
Dr. Mallory Opie	Ophthalmologists	https://image.com #42		10:05 am - 11:30	
Dr. Simon Lobos	Pathologists	https://image.com #35		10:11 am - 11:30	Category: 1. Should be select in limited dropdown menu
Dr. Pedro Spang	General practitioner	https://image.com #28		10:05 am - 11:30	
Dr. Roman Rass	Medical Geneticists	https://image.com #21		10:11 am - 11:30	Profile: 1. Profile should be in jpg,png, jpeg format
Dr. Graham Rea	Nephrologists	https://image.com #14		10:11 am - 11:30	2. Photo size should not exceed 400KB
Dr. Hazel Leabo	Obstetricians and Gynecologists	https://image.com #07		10:11 am - 11:30	
Carmen Benton	Ophthalmologists	https://image.com #78		10:05 am - 11:30	Chember:
Dr. Simon Lobos	Pathologists	https://image.com #35		10:11 am - 11:30	1. Number should be in numeric format
Dr. Pedro Spang	General practitioner	https://image.com #28		10:05 am - 11:30	Time: 1. Time will cover proper time length
Dr. Roman Rass	Medical Geneticists	https://image.com #21		10:11 am - 11:30	1. Time will cover proper time length

4.5 Order Confirmation

Authorize users can make drugs order login with credentials.

Order ID: Integer OrderId should be increased in every order, it will be unique will fill automatically.

Price: Sum of all drugs price will be shown there it will automatically filled up.

Name: Automatically filled up from database.

Phone: Have in total 11 digit number number pattern should start on 01xxxxxxxxx

Address: Character must be under 65-90, 97-122 ASCII value should be filled up

Order Confirmation					
Order_Id	Price	Full_Name	Phone_Number	Address	Expected Results
123	510 tk.	Somita Akter	1304957662	Mirpur-10	"Order_Id: 1. Order_Id should be increased in evrey order
123	510 tk	Somita akter	1304957662	Mirpur-10	2. Order_Id should be uniqe.
124	500	Somita akter	1304957662	Mirpur-10	2. Order_Id must be automatically filled up.
125	510 tk	Somita	1304957662	Mirpur-10	
126	511 tk	somita	1304957662	Mirpur-10	
127	512 tk	smt	1304957662	Mirpur-10	Price: 1. price automatically filled up.
128	513 tk	Somita Akte	130495	Mirpur-10	
129	513 tk	Somita Akte	1304957562	Mirpur-1	Full_Name: 1. Character must be under 65-90, 97-122 ASCII value
130	514 tk	Somita Akte	1304957562	mirpur-2	2. Each of starting word should be in Uppercamel case
131	511 tk.	Somita Akter	942505590.6	Mirpur-10	3. Character length must be 50 character limit
132	511 tk	Somita akter	899011340	Mirpur-10	4. Name filled automatically filled up.
133	501	Somita akter	855517089.5	Mirpur-10	
134	510 tk	Somita	812022838.9	Mirpur-10	Phone_Number: 1. Should have minimum of 11 digit length.
135	511 tk	somita	768528588.3	Mirpur-10	2. Phone-Number filled should be filled up.
136	512 tk		725034337.8	Mirpur-10	
137	513 tk	Somita Akte	681540087.2	Mirpur-10	
138	513 tk	Somita Akte	638045836.6	Mirpur-1	
139	514 tk	Somita Akte	594551586.1	mirpur-3	Address: 1. Character must be under 65-90, 97-122 ASCII value
140	512 tk.	Somita Akter	551057335.5	Mirpur-10	2. Adress filled should be filled up.
141	512 tk	Somita akter	507563084.9	Mirpur-10	
142	502	Somita akter	464068834.4	Mirpur-10	
143	510 tk	Somita	420574583.8	Mirpur-10	
144	511 tk	somita	377080333.2	Mirpur-10	

4.6 Add Drugs

Authorize users can make drugs order login with credentials.

Name: Drugs Name Should be under 65-90, 97-122 ASCII value it should be filled up

Price: Price will be in integer form

Expire Date: Expire date will be in String form must be filled up

Stock: In a integer form stock quantity need to be input while uploading a drugs

Categories: From prefilled drop-down menu, Drugs category need to be selected.

Picture: For drugs picture, it will take only jpg, png file format

Add Drugs					
Name	Price	Expire_date	Stock	Catagories	Expected Results
Napa	100tk	EXP030225	100	Tablet	Name: 1. Character must be under 65-90, 97-122 ASCII value 2. Each of starting word should be in Uppercamel case 3. Character length must be 50 character limit 4. Name filled should filled up.
Acetaminopl	100	EXP030226	60	Sirap	
Adderall	10	EXP030227	150	Tablet	
Amitriptyline	100tk	EXP030228	240	Sirap	
Amlodipine	100	EXP030229	330	Tablet	
Amoxicillin	100tk	EXP030230	420	Sirap	
Ativan	100	EXP030231	510	Tablet	
Atorvastatin	100tk	EXP030232	600	Sirap	
Azithromycir	100tk	EXP030233	690	Tablet	Price: 1. Should be filled
Adderall	11	EXP030234	780	Tablet	Expire_Date: 1. Should be filled
Amitriptyline	100tk	EXP030235	870	Sirap	Stock: 1. Should be in numeric format 2. Stock should be updated.
Amlodipine	101	EXP030236	960	Tablet	
Amoxicillin	100tk	EXP030237	1050	Sirap	Category: 1. Should be select in limited dropdown menu

Chapter 5

5 Conclusion

5.1 Summary of the Project

The project involved developing a Doctor Appointment Drugs Buy Website. The website allows users to conveniently schedule doctor appointments at their preferred time and make online payments. Additionally, users can purchase prescription drugs through the platform. The project encompassed requirement analysis and design, including the identification of functional and non-functional requirements. Various tools and techniques, such as use case diagrams, data flow diagrams, and an E-R diagram, were utilized for analysis and database design. Project scheduling was managed through a Gantt chart. The system architecture was discussed, highlighting the web application, database management system, and integration with external systems. Overall, the project successfully delivered a comprehensive solution for facilitating doctor appointments and online drug purchases.

5.2 Future Works

Despite all that we managed to do, finishing this project was not without its difficulties. Given that it is an online web-based system, both the doctor and the patient must abide by the regulations when utilizing it in order for it to succeed.

An online system is always subject to change. It advances daily, becoming more and better to make life easier for people. This might be a ground-breaking digital tool that fosters relationships between patients and doctors. We think we can improve this system in the future. Future updates will provide advanced functions and user interface. Our project could involve developing a mobile application for increased accessibility. Integration with Electronic Health Records (EHR) would enhance data sharing among healthcare providers. Advanced analytics and reporting features could provide valuable insights for decision-making. Strengthening security measures, expanding services like telemedicine, and gathering continuous user feedback would further improve the website's functionality and user experience. Although our system is already user-friendly, we will continue to work on improving it.

References

- <https://react.dev/learn>
- <https://react.dev/learn>
- <https://www.mongodb.com/docs/>