

**MEDLIFE: A WEB APPLICATION FOR ONLINE
PHARMACEUTICAL DELIVERY & EMERGENCY
CARE PROVIDER SYSTEM**

BY

Md. Hafijur Rahman Sumon

ID: 192-15-13287

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

Supervised By

Nishat Sultana

Lecturer

Department of CSE

Daffodil International University

Co-Supervised By

Tapasy Rabeya

Lecturer

Department of CSE

Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY
DHAKA, BANGLADESH**

APPROVAL

This project titled "MEDLIFE: A Web Application for Online Pharmaceutical Delivery & Emergency Care Provider System", submitted by *Md.Hafijur Rahman Sumon *to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents.

The presentation was held on *date*.

BOARD OF EXAMINERS

Chairman

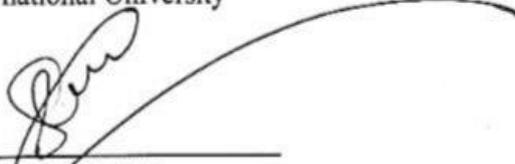
Dr. Touhid Bhuiyan
Professor and Head

Department of Computer Science and Engineering
Faculty of Science & Information Technology Daffodil
International University



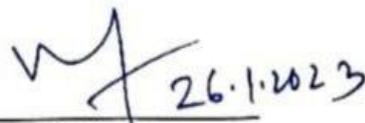
Sazzadur Ahmed
Assistant Professor

Department of Computer Science and Engineering
Faculty of Science & Information Technology Daffodil
International University



Ms. Sharmin Akter
Senior Lecturer

Department of Computer Science and Engineering
Faculty of Science & Information Technology Daffodil
International University



Dr. Ahmed Wasif Reza
Associate Professor

Department of Computer Science and Engineering
East West University

Internal Examiner

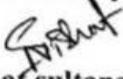
Internal Examiner

External Examiner

DECLARATION

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

Supervised by:


Nishat sultana
Lecturer
Department of CSE
Daffodil International University

Co-Supervised by:

Tapasy Rabeya
Lecturer
Department of CSE
Daffodil International University

Submitted by:


Md.Hafijur Rahman Sumon
ID: 192-15-13287
Department of CSE
Daffodil International University

ACKNOWLEDGMENT

We want to express our sincere gratitude to all those who have contributed to completing our B.Sc. final year project.

First and foremost, we are grateful to our project supervisor **Nishat Sultana**, for his invaluable guidance and support throughout the project. His expertise and insight greatly enhanced the quality of our work.

We also extend our heartfelt thanks to the members of our project committee, for their valuable feedback and constructive criticism, which helped us significantly improve the project.

We are also grateful to our colleagues and friends who have supported us throughout the project. Their encouragement and motivation were instrumental in keeping us on track and helping us overcome our challenges.

Finally, we would like to thank our family for their love and support, which gave us the strength and motivation to complete this project.

We are grateful to everyone who has contributed to the success of this project. Thank you all for your help and support.

Abstract

A highly important tool in the current circumstances is the online pharmacy. During COVID-19, it is advised against and unhealthy to purchase medications and make healthcare appointments. Therefore, we are attempting to develop a web tool that will allow us to organize appointments with patients and physicians. Additionally, we are working to develop a web-based pharmacy for more convenient and quick services. Events like various activities carried out occasionally play a crucial role in the growth of any firm in the era of increased online communication and extensive information technology use in every aspect of our daily lives. Every single health organization is made up of patients, physicians, and numerous other administrative players. For each of these functional entities, managing patients and physicians becomes very important for good management. Despite the fact that there are numerous other online pharmacies, our project is entirely centered on the perspective of any pharmacy in Bangladesh. With this system, we tried to create an efficient, functional, and simple method for the creation of online medicine ordering and doctor scheduling systems. The specifications for such a system are gathered from various hospitals and online resources. The proposed system's design was carried out in accordance with user requirements. Open source software is used to implement the system. The system passed tests for a variety of tasks and was deemed adequate. The technology will eventually be included as a smartphone app.

TABLE OF CONTENTS

CONTENTS	PAGE
BOARD OF EXAMINERS.....	ii
APPROVAL.....	ii
ACKNOWLEDGEMENT.....	iii
EXECUTIV SUMMERY.....	iv
TABLE OF CONTENTS.....	v-vi
CHAPTER 1: INTRODUCTION	1-3
1.1 Introduction.....	1
1.2 Objective.....	1
1.3 Motivation.....	2
1.4 Expected Outcomes.....	2
1.5 Report Layout.....	3
CHAPTER 2: BACKGROUND.....	4-7
2.1 Introduction.....	4
2.2 Organization Event Scenario.....	4
2.3 Event Collaboration.....	4
2.4 Related works.....	4
2.4.1 Med life.....	5
2.4.2 Popular Hospital website.....	5-6
2.5 Comparative Studios.....	6
2.6 Scope of the Problem.....	7
2.7 Challenges.....	7
CHAPTER 3: REQUIREMENT SPECIFICATION.....	8-
10	

3.1 Flow Chart.....	8
3.2 Requirement Collection and Analysis.....	9
3.3 Use Case Modeling and Description.....	9-10
CHAPTER 4: DESIGN SPECIFICATION.....	11-20
4.1 Development Tools & Technology.....	11
4.2 Front-end Design.....	12-17
4.3 Back-end Design.....	17-19
4.4 Implementation Requirements.....	20
CHAPTER 5: IMPLEMENTATION AND TESTING	21-27
5.1 ER Diagram.....	21
5.2 Implementation and Testing.....	22
5.2.1 Black Box Testing.....	23
5.2.2 White Box Testing.....	24
5.2.3 Unit Testing.....	25
5.3 Testing Environment.....	26
5.4 Testing Implementation.....	27
5.4 Test Results and Reports.....	27
CHAPTER 6: IMPACT ON SOCIETY & ENVIRONMENT.....	28
6.1 Impact on Society.....	28
6.2 Impact on Environment.....	28
CHAPTER 7: CONCLUSION AND FUTURE SCOPE.....	29
7.1 Discussion and Conclusion.....	29
7.2 Scope for Further Development.....	29
REFERENCES.....	30-31

LIST OF FIGURES

Figure 2.1: Select product, checkout page, payment.....	5
Figure 2.2: Popular website	6
Figure 3.1: Full overview flow chart diagram System	8
Figure 3.2: System use case diagram	9
Figure 3.3: Admin use case diagram	10
Figure 4.1: Home page	13
Figure 4.2: Dark mood option	14
Figure 4.3: Appointment & emergency service provides Management System.....	15
Figure 4.4: Patient registration System	16
Figure 4.5: Patient login	16
Figure 4.6: Patient dashboard System	17
Figure 4.7: Design for tablet System	18
Figure 4.8: Design for mobile System	19
Figure 5.1: Appointment process System	21
Figure 5.2: Representation of the process of Black Box Testing.....	23
Figure 5.3: Representation of the process of White Box Testing	24
Figure 5.4: Representation of the Life Cycle of Unit Testing	25

CHAPTER 1

Introduction 1.1

Introduction A web application for a pharmacy is a project that combines the features of an online pharmacy with a web application for a pharmacy. Administrators can register users on the system, and users can register on the application. After making a payment, patients can schedule an appointment, and the entire application will be instantly accepted. Only the admin is permitted to discharge. It is suggested that this be a web application. The COVID-19 incident is mostly where the notion originated.

1.2 Objectives

A Web Application for Medicine Shops' primary goal is to offer a faultless administration dashboard for medicine shops to pharmacy administrators only. Admin is in control of everyone who has registered for a specific user at all times. The main goal of this system is to provide the administrator total control over the physicians and patients. Additionally, it guarantees flexibility for both patients and doctors. Our system's objectives are:

- To deliver a perfect pharmacy dashboard
- Admin will have complete authority over the creation of new users and their management.
- Registration Management
- Online Registration & Payment

1.3 Motivation

In this planet, a wide variety of technologies have been created. The most effective of these is the computer. For writing documents in the past, people utilized pens and paper. However, modern automated systems are being created to address this problem. COVID19 is currently causing epidemic conditions throughout the entire world. Today, maintaining patient care should be simple and possible online. These days, meeting and consulting face to-face for a COVID issue makes both patients and doctors feel hazardous and dangerous. As a result, in order to lower this risk, we are working to design a system that, in principle, entails building a web platform that allows an administrator to handle appointment scheduling, payment processing, and user registration online. Designing and hosting a web portal for the management of medical care between a doctor and patient is the focus of the project activity. We created the project using HTML, CSS, JavaScript, ReactJS, NodeJS, ExpressJS, and mongoDB for the database.

1.4 Expected Outcome

Our project's primary goal is to give a pharmacy a dashboard for tracking and controlling patient and physician consultation. But there will also be room for patients and medical professionals. Patients will be able to sign up and make an appointment with a doctor who is open. Additionally, they can describe and add their symptoms. The system will be accessible from anywhere in the world over the internet and will be able to run on any platform with a web browser. The system will also be secure because it efficiently safeguards data privacy and confidentiality.

1.5 Report Layout

Everyone is aware that practical knowledge comes before theoretical knowledge. We acquired a great deal of theoretical knowledge throughout our educational careers and had the opportunity to apply that knowledge and ability to this project. Introduction, Objectives, Motivation, Expected Outcome, and Report Layout of the Project were covered in the First Chapter. The project introduction, related works, comparative studies, the problem's scope, and our project's challenges are all included in the second chapter. Use case modeling and description, a logical data model, and design requirements are all covered in the third chapter, which is all about requirement specification. The fourth chapter provides a detailed overview of our entire website, including the front-end design, back-end design, interaction design and user experience, and implementation requirements. Testing and Implementation are covered in Chapter 5. This includes Front-end Design, Interactions, Database Implementation, Testing Implementation, and Test Results and Reports. The culmination of the entire endeavor is found in our final chapter. This report details every aspect of our web system, including the issue, the fix, and system usage.

CHAPTER 2

BACKGROUND

2.1 Introduction

For appointments, treatments, and payments, a web application is created for pharmacies. Prior to admitting the patient under a doctor, a Web application for a pharmacy entails researching the process' complexities, identifying the related issue, coming up with the idea for an online pharmacy, logistics planning, and coordinating the technological components. The method of meeting and consulting doctors outside of the home has turned into a perilous and dangerous process as a result of the recent COVID-19 scenario throughout the world. There are a small number of hospitals in our nation that have implemented an online management system as compared to the total number of hospitals and patients. Both parties will profit from this system's well-organized management approach.

2.2. Organization Events Scenario

A pharmacy was established with numerous divisions, each of which had its own doctors. Between doctors, patients, and administration, there is a communication gap or a system that is difficult to access. Both scheduling appointments with doctors and having doctor patient consultations involve challenging processes. So, handling the matter offline is not always possible. Online solutions can therefore eliminate or reduce difficulties.

2.3 Event Collaboration

Administration, medical professionals, and patients all work together at a pharmacy. Due to a lack of real-time updates on the doctors' availability, pharmacy administrators frequently fail to schedule the appointment. The administrator must first confirm that the patient's requested doctor is available before scheduling an appointment. In that instance, they will encounter challenges getting updates fast.

2.4 Related Works

Pharmacy, registration administration, badge printing, hotel booking, payment processing, and invoice generating are a few examples.

2.4.1: MEDLIFE

Figure:2. Screenshot of the Med Life website in 1 Bangladeshi online pharmacy Med Life operates. In essence, Med Life serves as a doorway to Universal Health Coverage (UHC). It provides medical care and financial assistance to the members and their families. [1]

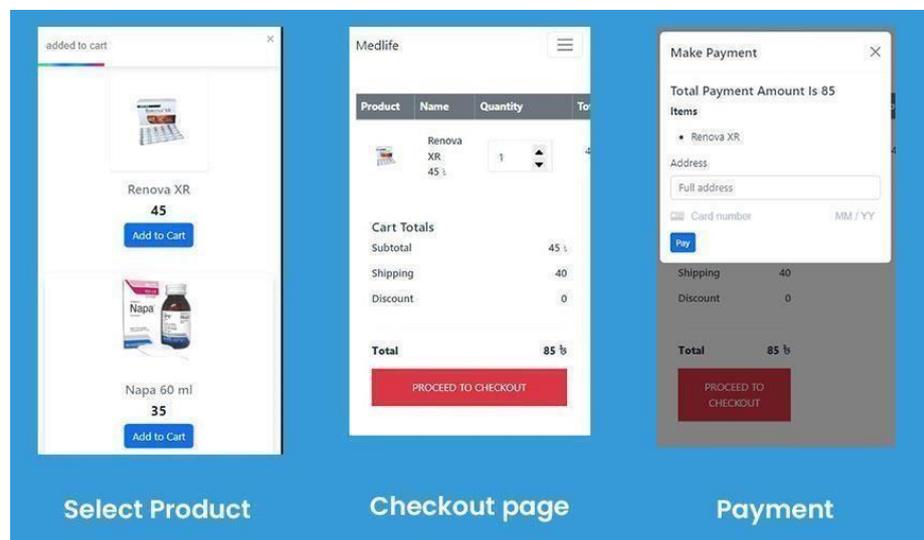


Figure: 2.1

You have the freedom to select the goods and appointments you want with MEDLIFE. After you confirm the payment, your order will be delivered as soon as feasible.

2.4.2 Popular pharmacy website

Pictured in Figure:2.2 is a popular pharmacy website. Popular Diagnostics Limited One of Bangladesh's most modern diagnostic and medical services facilities. It was founded in 1983 and is well-known as Bangladesh's most advanced diagnostic facility. It is a sizable firm that offers diagnostic services in Bangladesh's private sector. It has excelled in introducing the most cutting-edge medical technology and digital equipment to offer medical research and treatment services. [2]

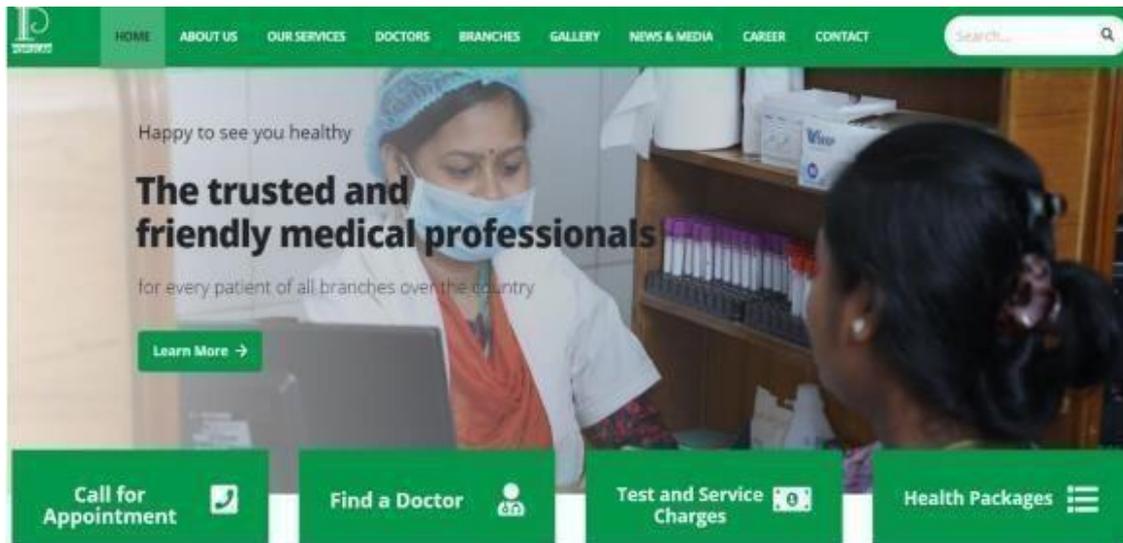


Figure:2.2 Popular website

Features [1] [2]

- Doctor appointment
- Discount
- Ambulance call
- Find doctor
- Find nearest branch
- Patient record
- Online payments

2.5 Comparative Studies

First off, MEDLIFE and Popular Pharmacy Website are not autonomous, and in order to install them on mobile phones, users must have other systems and specifications loaded. They also have application module systems. These issues are not present in the web application for drug stores, which anyone can access from any location using a browser. Second, installing and running our system is incredibly inexpensive. In our system, the pharmacist will be in charge of managing this website, along with patient registration. It's a system in which both doctors and patients engage and is run by one person for their own management. And finally, our system is free to use by any organization.

©Daffodil International University

2.6 Scope of the Problems

- 1) Try exception handling; we didn't perform this to prevent system failure in the event that incorrect data is inserted.
- 2) Use API
- 3) Role-based permission problem
- 4) Data insertion problem in Database

2.7 Challenges

- **Try Exception handling:**

Try exception refers to testing the system with false data. If we do, try exception handling so that the system won't crash even if we provide incorrect data. Trycatch is the simplest approach of managing exceptions. Any exceptions that the code throws will be captured by one or more catch blocks after the try block contains the code that we wish to perform. This technique will catch any exceptions that are thrown. The easiest method for managing exceptions is this one.

- **Used API:** Application Programming Interfaces (APIs) are building blocks included in programming languages that enable programmers to more quickly design complicated functionality. They remove more difficult code from you and provide simpler syntax in its stead.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Flow Chart

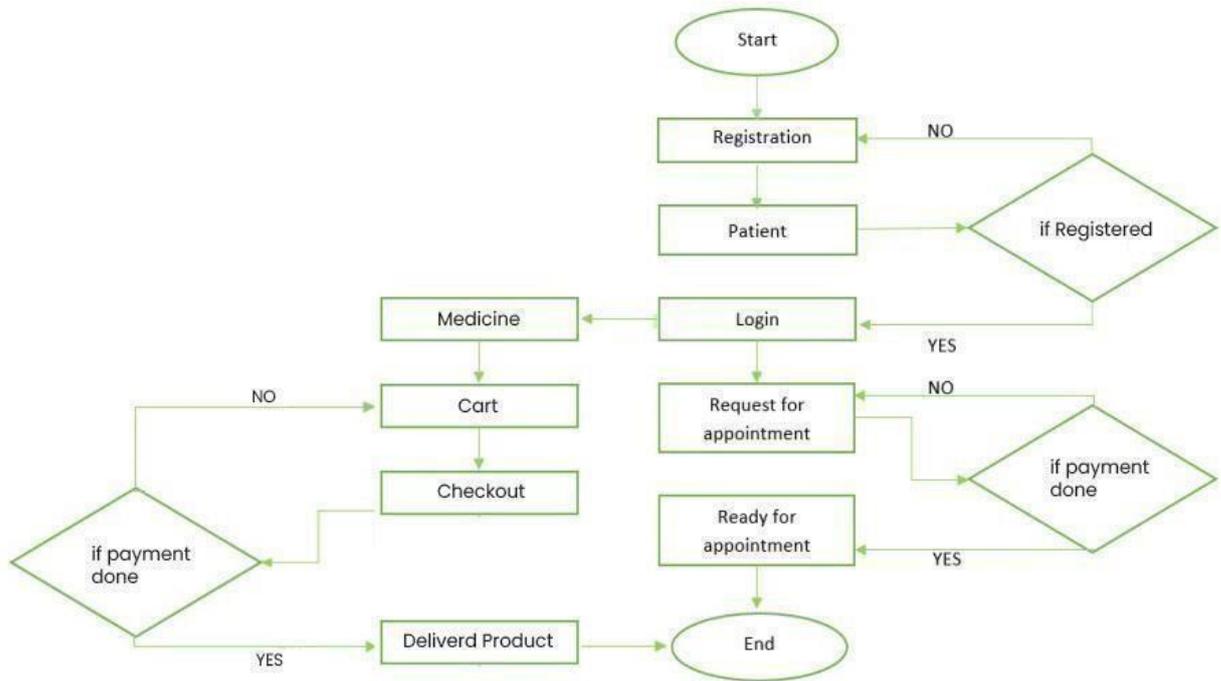


Figure: 3.1 flowchart of the project

This is flowchart of our project that lists each step separately and in the proper order. The patient will be where the process begins. Patients are able to register an account and log in to that account. The patient can then ask for a prescription and an appointment. Requests for prescription drugs and patient appointments are automatically authorized after payment.

3.2 Requirement Collection and Analysis

In order to gather requirements, we first search for an appropriate framework to support our application. Reacts library was utilized for this application. We use the Windows operating system as our OS.

3.3 Use Case Modeling and Description

a use-case model that displays how various user types use the system and resolve issues. It

outlines the users' objectives, illustrates how they interact with the system, and details the needed system behavior. Actors, use cases, and the connections between them are some crucial components of a use-case model. [3]

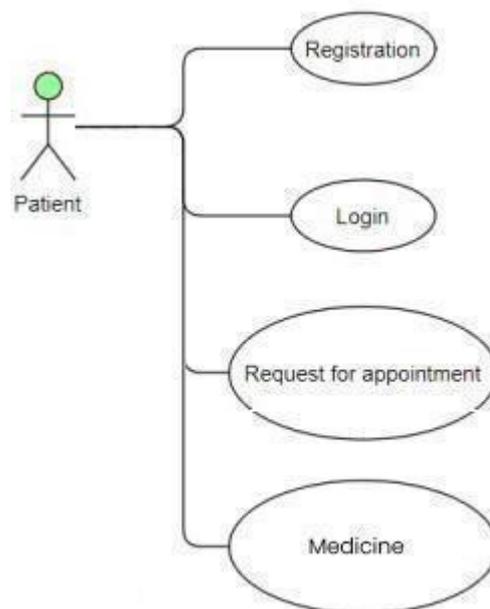


Figure: 3.2 System Use case diagram

The following procedures are displayed in our project's system use case. Patients have the option of creating an account and logging in. The patient can then make an appointment after that. The patient will be prepared for their appointment and treatment once they have paid for it and the system has approved their request. additionally, they can order the appropriate medications.

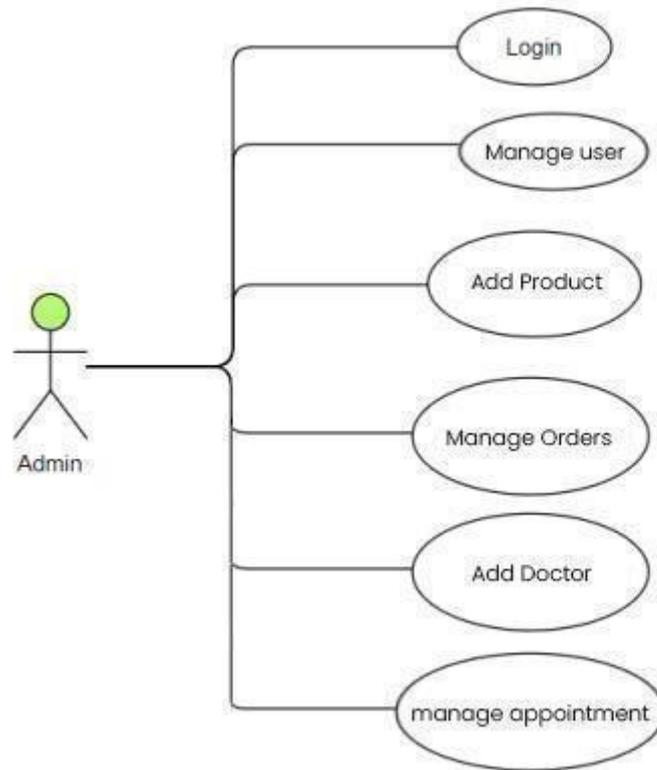


Figure: 3.3 Admin Use case diagram

Use Case Details:

Use case name: Admin Use Case Actor: Admin Primary

Path:

1. Enter Login ID
2. Enter Password
3. Click “Login” button

CHAPTER 4

4.1 Development Tools & Technology

In order to select the best tools and technologies for a project's development, it is crucial to take into account the project's actual performance needs. This may entail considering the project's complexity, the volume of data that has to be processed, the system's anticipated performance and scalability, as well as any particular limits or requirements that must be satisfied. Programming languages, frameworks, libraries, databases, and tools for testing, debugging, and project deployment are some examples of standard tools and technologies. To make sure they can fulfill the requirements of the project, it is crucial to carefully assess the capabilities and limitations of various tools and technologies. This could entail benchmarking and performance testing as well as asking other developers or subject matter experts for advice.

Design Specification

4.2 Front-end Design

1. Hypertext Markup Language (HTML) is referred to as a short form. Widespread HTML usage is required to build the foundation of websites and software. HTML documents are sent to the web browser via the web server or local storage. The relevant design layout is then shown by the web browser after reading the HTML codes. The required webpage can then be designed using the necessary CSS codes. [4]

2. CSS

Cascading Style Sheet is CSS. HTML elements on screens are described using CSS. A HTML code can invoke CSS in three different ways. like Internal, External, and Inline. We save external stylesheets in CSS files. CSS makes a lot of tasks simple because it can manage numerous pages at once. The primary purpose of CSS is to improve code readability. We can create our web sites using CSS to meet our needs and preferences. [5]

3. JavaScript

A text-based programming language is JavaScript. Both client-side and serverside applications use it. It offers assistance for creating dynamic, interactive web sites. Web pages are more engaging for users when they have interactive components provided by JavaScript, CSS, and HTML.

4. React JS

"Facebook created the open-source React.js framework, a JavaScript framework and library. In comparison to using pure JavaScript, it is used to quickly and effectively create interactive user interfaces and web applications.

Lorem ipsum dolor, sit amet consectetur

Lorem ipsum dolor sit, amet consectetur adipisicing elit. Praesentium veniam quaeerat suscipit repellendus ipsam possimus

For Dhaka Only

100% Delivery success

5.0 Customer Review



Most Popular Products

 Renova XR 45 Add to Cart	 Napa 60 ml 35 Add to Cart	 Napa Extend 20 Add to Cart	 Napa Extra 30 Add to Cart	 Ace XR 20 Add to Cart	 Napa 15 Add to Cart
--	---	--	---	---	---

Book a appointment
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.

Home delivery in 30 minutes
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit longer.

Browse medicines & health products

Eczema	Pregnancy	Gastric	Vitamins
 Renova XR 45 Add to Cart	 Napa 60 ml 35 Add to Cart	 Napa Extend 20 Add to Cart	 Napa Extra 30 Add to Cart
 Ace XR 20 Add to Cart	 Napa 15 Add to Cart	 Napa Rapid 15 Add to Cart	 Microgest 200 285 Add to Cart
 Tufnil 100 Add to Cart	 Namitol 200 95 Add to Cart		

Customers Review & Recommendations

Lorem ipsum dolor sit amet consectetur adipisicing elit. Delectus, cumque possimus, dolorum harum corrupti quo eaque facere accusamus architecto modi repellendus inventore tempore blanditulis soluta sed rem, velit ad asperiores!

Full Name Work position

Figure: 4.1 Home Page



Figure: 4.2 dark mode option

When it's dark outside, reading in front of a bright screen might make us squint and strain our eyes. Users of the dark mode experience less eye strain and better reading in low light. They also assert that it makes it easier for them to get to sleep and stay asleep. reduces glare and nighttime eye strain

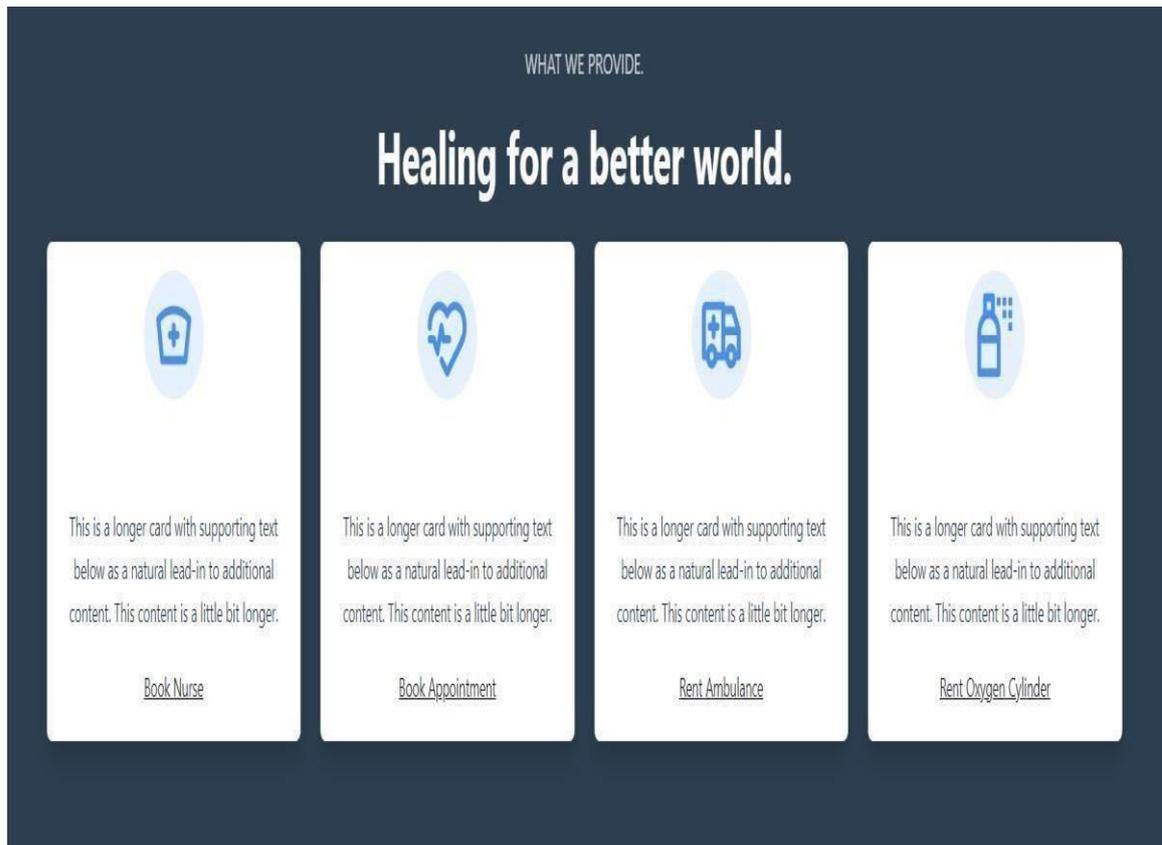


Figure: 4.3 appointment & emergency service provide

Here we providing doctor appointment, nurse appointment, emergency ambulance service, emergency oxygen services etc.

This is our website's home page. As you can see, our website has a navigation bar that users may utilize to access different pages and make use of our services. Additionally, you can see that we have a few product displays on our home page, along with a few client testimonials.



The registration form includes the following fields and elements:

- User Name:** A text input field with the placeholder text "full name".
- Profile Photo:** A file upload area with a "Choose File" button and the text "No file chosen".
- Email Address:** A text input field.
- Password:** A text input field.
- Register:** A blue button with white text.
- Already Have An Account ? Login Here:** A link below the Register button.

Figure: 4.4 Patient Registration

This page is for patients to register. They must enter information into boxes like Username, Password, Email, and Profile Picture while creating an account. Following registration, the patient will be able to login, make an appointment, and purchase medications.



The login form includes the following elements:

- Medlife:** The website name on the left side of the navigation bar.
- Home Medicine Services Contact Blog:** Navigation links in the center of the navigation bar.
- Cart:** A blue button with a shopping cart icon and the text "Cart" on the right side of the navigation bar.
- Toggle and Sun Icon:** A grey toggle switch and a yellow sun icon on the right side of the navigation bar.
- Email Address:** A text input field with the placeholder text "Email".
- Password:** A text input field with the placeholder text "Password".
- Login:** A blue button with white text.
- Need An Account ? Register:** A link below the Login button.

© 2022 My-medlife

f @ t in

Figure: 4.5 Patient login

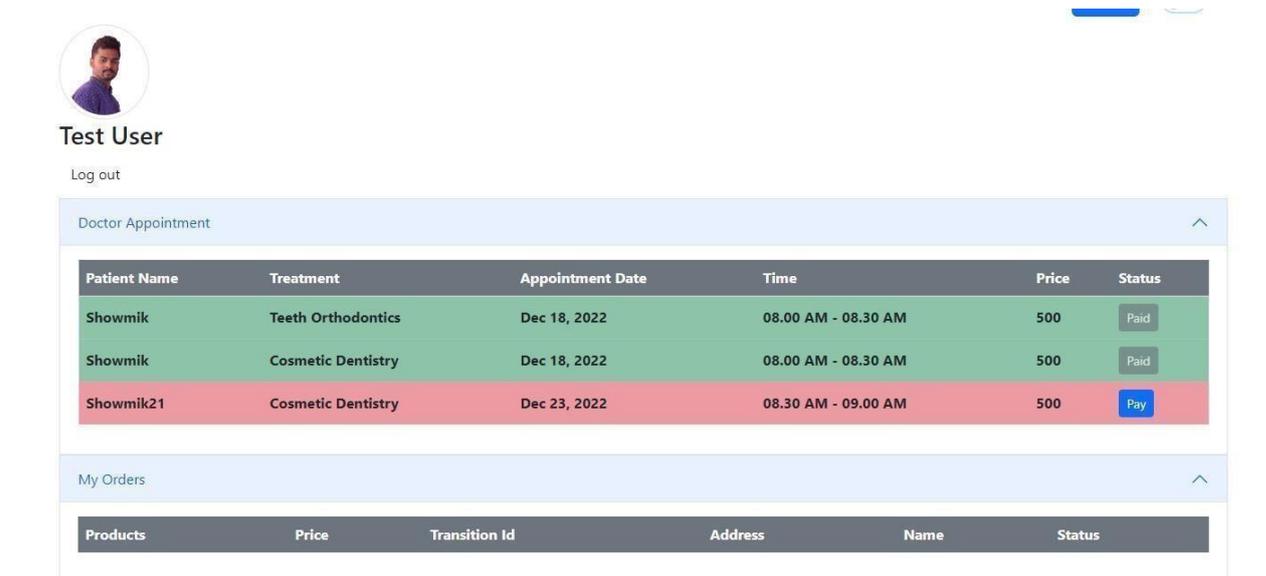


Figure: 4.6 Patient Dashboard

The patient can access the My Account page after logging in. where the status of medication orders and patient doctor appointments will be shown.

Implementation of Front-end Design

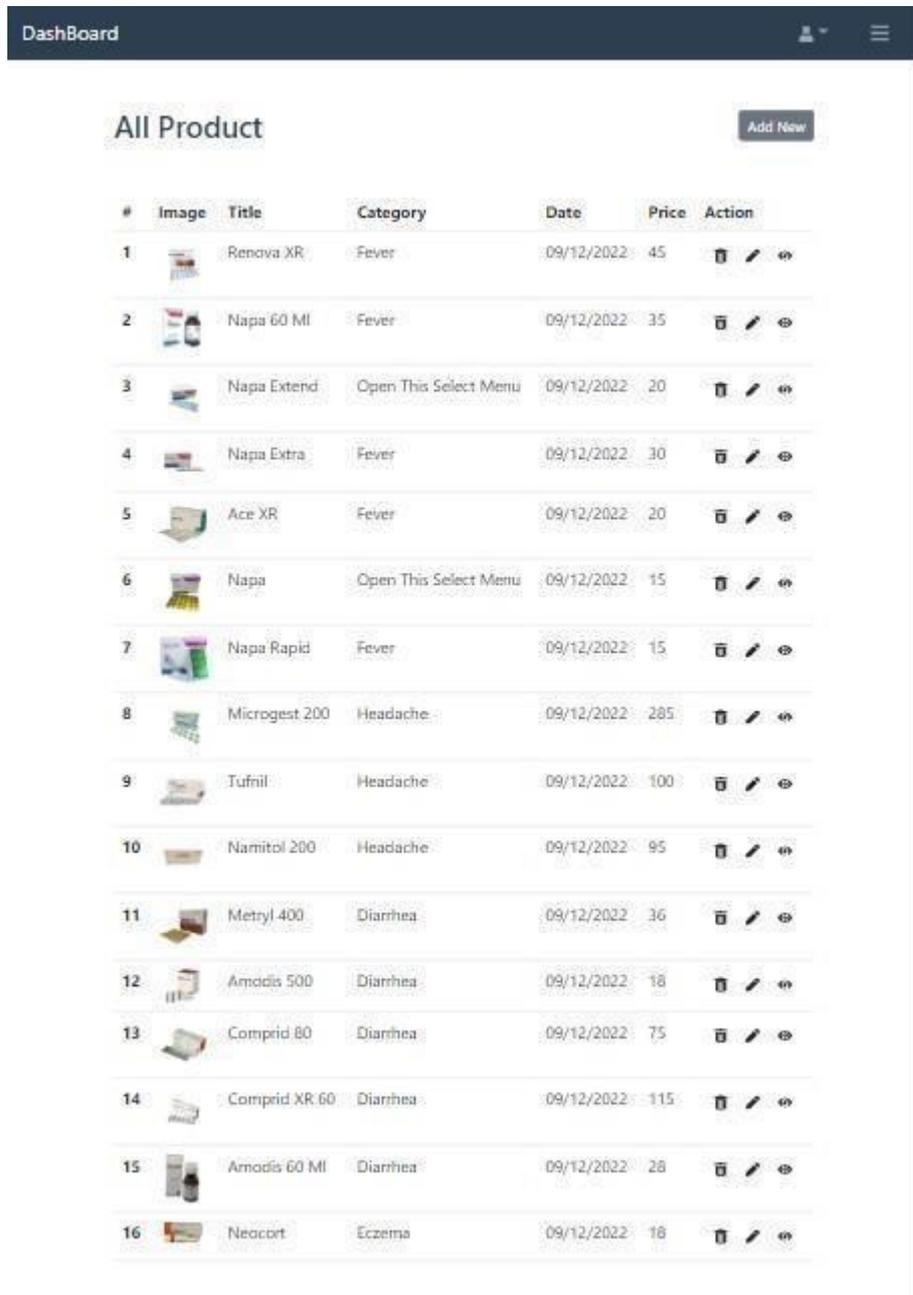
Prior to beginning to implement the web template, we planned the user interface. Because we used Ajax to interface with our Chat Application's backend, we used a lot of JavaScript.

4.3 Back-end Design

Mongo DB was used as the database. MongoDB is a cross-platform document oriented database application that is open source. MongoDB, a NoSQL database application, employs documents that resemble JSON and may or may not include schemas. Developed by MongoDB Inc., MongoDB is licensed under the Server Side Public License (SSPL), which some distributions consider to be non-free.

Interaction Design and User Experience (UX)

Giving a user-friendly environment while a user runs the system is crucial for frontend development. We made an effort to increase responsiveness across the board.



The screenshot shows a tablet interface for a dashboard. At the top, there is a dark blue header with the text "DashBoard" on the left and a user profile icon and a menu icon on the right. Below the header, the main content area is titled "All Product" on the left and has an "Add New" button on the right. The main content is a table with 16 rows of product data. Each row contains an index number, a product image, the product title, the category, the date, the price, and an action menu with three icons (delete, edit, and refresh).

#	Image	Title	Category	Date	Price	Action
1		Renova XR	Fever	09/12/2022	45	
2		Napa 60 MI	Fever	09/12/2022	35	
3		Napa Extend	Open This Select Menu	09/12/2022	20	
4		Napa Extra	Fever	09/12/2022	30	
5		Ace XR	Fever	09/12/2022	20	
6		Napa	Open This Select Menu	09/12/2022	15	
7		Napa Rapid	Fever	09/12/2022	15	
8		Microgest 200	Headache	09/12/2022	285	
9		Tufnil	Headache	09/12/2022	100	
10		Narmitol 200	Headache	09/12/2022	95	
11		Metryl 400	Diarrhea	09/12/2022	36	
12		Amodis 500	Diarrhea	09/12/2022	18	
13		Compid 80	Diarrhea	09/12/2022	75	
14		Compid XR 60	Diarrhea	09/12/2022	115	
15		Amodis 60 MI	Diarrhea	09/12/2022	28	
16		Neocort	Eczema	09/12/2022	18	

Figure: 4.7 Design for tablet

The IPAD PRO X tablet view looks like this. To provide a good viewing experience when the viewport is shrunk, the sections will automatically be divided into portions.



Figure: 4.8 Design for mobile

This is an iPhone X mobile view. To provide a good viewing experience when the viewport is shrunk, the sections will automatically be divided into portions.

4.4 Implementation Requirements

To implement the application, we used Django dependencies **Front end:**
stripe/react-stripe-js = 1.16.1 stripe/stripe-js = 1.46.0 tan stack/react-query = 4.19.1
date fans = 2.29.3 draft-js = 0.11.7 draft js-to-html = 0.9.1 firebase = 9.15.0 react =
18.2.0 react day-picker = 8.3.7 React-Dom =
18.2.0 react-draft-
WYSIWYG = 1.15.0
react-hook-form = 7.40.0 react-icons =
4.7.1 React Router-Dom = 6.4.4 react scripts" = "5.0.1 reactslick = 0.29.0 reacttestify
= 9.1.1 slick-carousel = 1.8.1 web vitals = 2.1.

Back end: cores =
2.8.5 doting =
16.0.3 express =
4.18.2 mongo dB =
4.12.1 no demon =
2.0.20 stripe = 11.4.

Chapter 5

Appointment process

On the day he chose, the patient is free to request an appointment at any moment. He may schedule an appointment at a specific time if no other patient has previously reserved it.

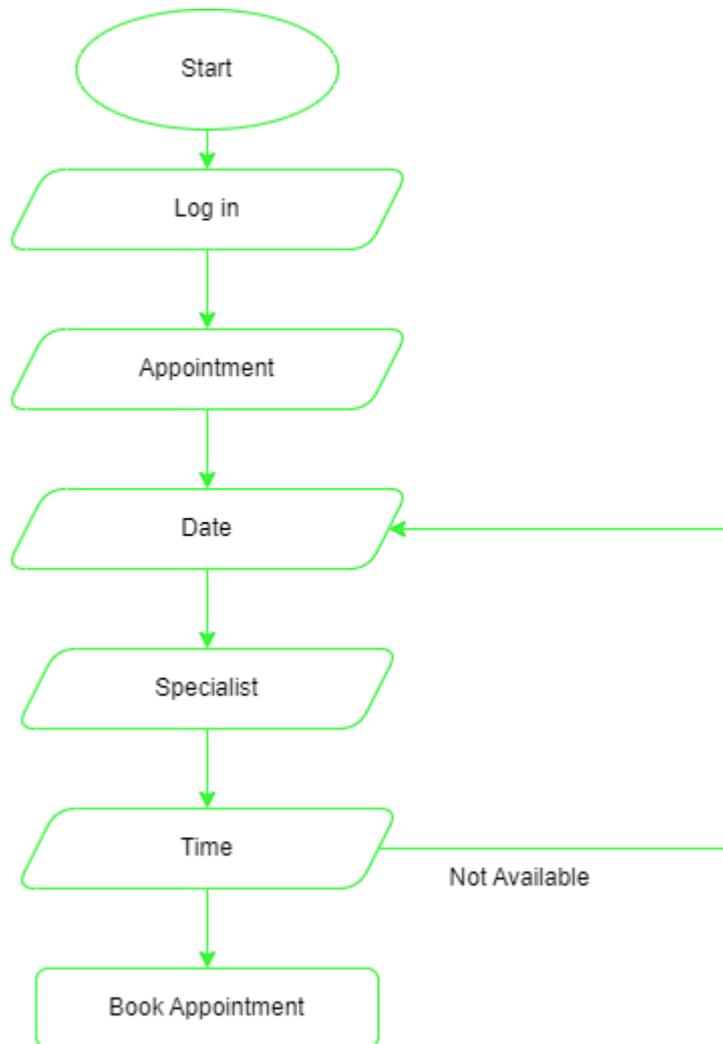


Figure: 5.1 appointment process

Testing

5.2 Test Approach

To assure the system's dependability and functionality, a thorough testing strategy was used for the Med life (an online pharmaceutical delivery & emergency care provider system) project. This process, which included manual and automated testing techniques, made sure that every system component was completely examined and that any flaws or problems were found and fixed.

Each part of the system was first subjected to unit tests to ensure that it was functioning properly. These tests were done manually and with the aid of automated testing tools, and they were created to cover a wide range of scenarios and settings. The system's various components were then put through integration testing to make sure they all functioned as expected. In order to evaluate the system's overall performance and behavior, these tests entailed creating test environments that replicated actual settings and scenarios.

In addition to these tests, system-level testing was carried out to confirm the overall functionality and behavior of the system. To find the system's boundaries and pinpoint any potential bottlenecks or vulnerabilities, this includes running stress testing. To make sure the system satisfied the needs and expectations of the system administrators who would be utilizing it, user acceptance tests were also carried out.

Overall, this testing strategy helped to guarantee the dependability and quality of the Med life (an online medicine delivery & emergency service provide system).

5.2.1 Black Box Testing

Black box testing is a type of testing that concentrates on a system's functioning without requiring any understanding of how it is implemented or structured inside. Black box testing could be used in the context of the Med Life (an online medicine delivery & emergency service provide system) project to ensure that the system can accurately and correctly display the available medicine & services and enable administrators to book appointments of doctors & nurses for various functions. This can entail developing test cases that simulate various aspects of the system's functionality, such as downloading new medications, looking up services, and making appointments with doctors for various purposes. To carry out these tests, the testers wouldn't need to be familiar with the internal implementation or organization of the system. In order to ascertain whether the system is operating properly, users would need to engage with it via its user interface and see the outcomes. Black box testing can be a useful tool for confirming that the Med Life (an online pharmaceutical delivery & emergency service provider system) operates as intended and satisfies user expectations. Due to this, we have decided to perform equivalence partitioning and boundary value analysis on this system.

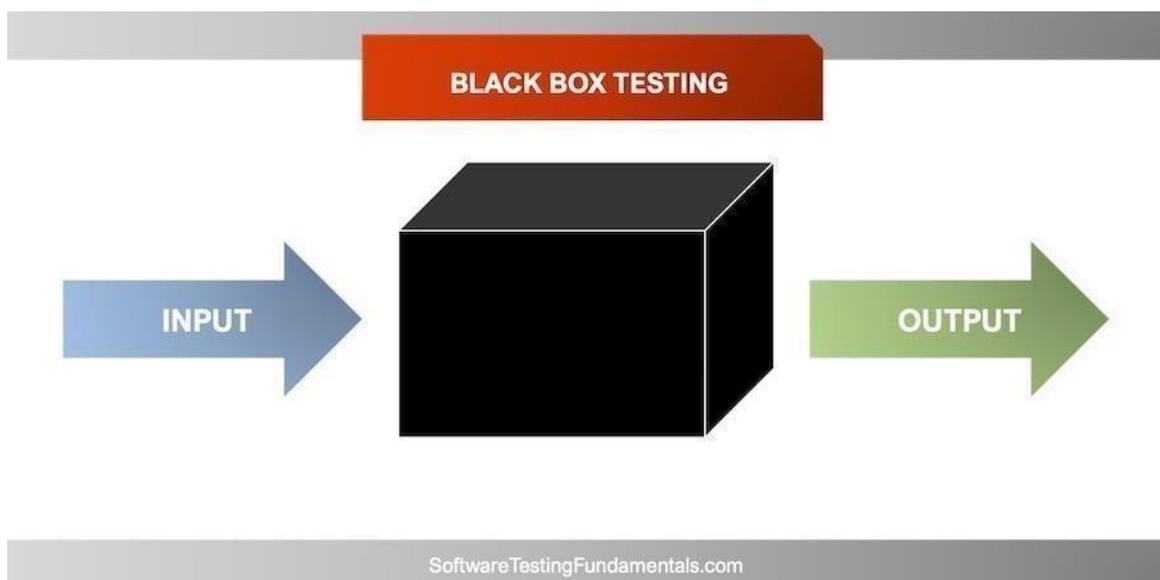


Figure 5.2: Representation of the process of Black Box Testing

5.2.2 White Box Testing

White box testing is a style of testing that concentrates on a system's internal design and implementation. White box testing could be utilized in the context of the Med Life (an online pharmaceutical distribution & emergency service offer system) project to guarantee that the system's various parts and features operate as intended. Testing the system's algorithms, data structures, and interactions between its various parts and functions may fall under this category. The system's error-handling and recovery procedures, as well as its security and privacy features, could all be tested as part of white box testing. By performing internal system testing, any problems or flaws can be found and fixed, enhancing the system's dependability and functionality.

White Box Testing

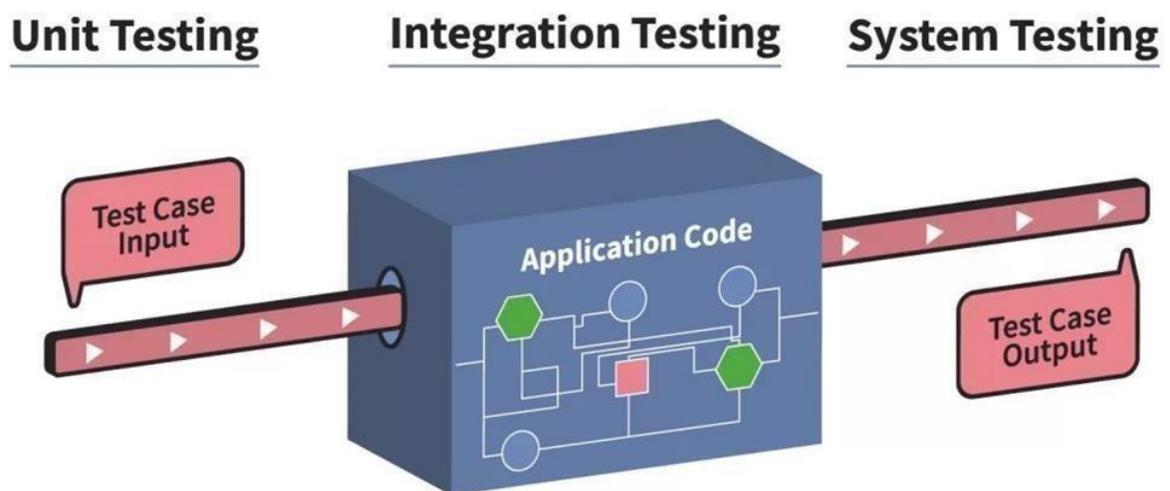


Figure 5.3: Representation of the procedure of White Box Testing

5.2.3 Unit Testing

Unit testing was a crucial part of the testing procedure for the Med Life (an online system for emergency service provision and medication distribution) project. The functioning and behavior of particular system components or functions are tested individually through unit tests. Unit tests were developed for the Med Life (an online medication delivery and emergency service provider system) to test the system's features and functionality, including the capability to upload new medications, display doctor or nurse or ambulance or oxygen availability, and book them for various tasks. These tests were created to make sure that every system component functioned properly and according to plan. Unit tests were additionally employed to check each function's input and output as well as to confirm the system's capacity to handle a variety of scenarios and data kinds. Overall, unit testing was extremely important in guaranteeing the Med life's dependability and quality (an online medicine delivery & emergency service provide system).

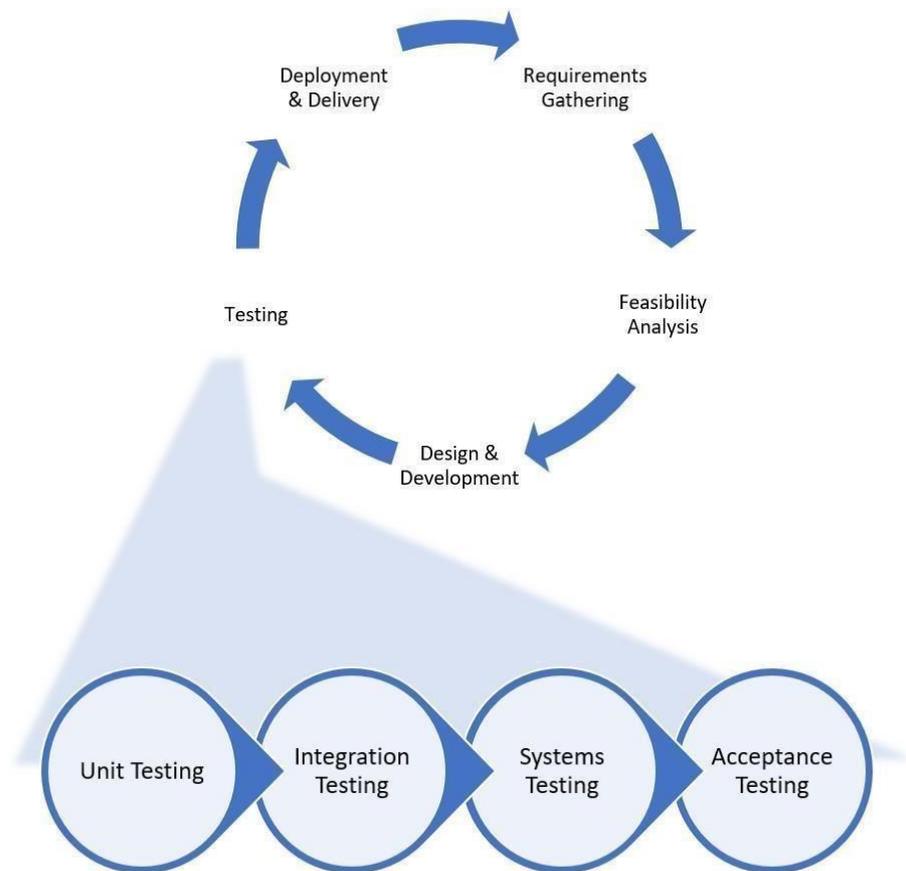


Figure 5.4: Representation of the Life Cycle of Unit Testing

5.3 Testing Environment

The Med Life (an online pharmaceutical distribution & emergency service provision system) project's testing environment was created to closely resemble the actual situations in which the system would be used. This involved modeling the various user scenarios and workloads the system was expected to handle as well as reproducing the hardware and software combinations that would be used in production. The testing environment was rigorously regulated and monitored, and any external elements that might have had an impact on the test results were properly accounted for and maintained, all in an effort to guarantee the validity. A variety of monitoring and diagnostic tools were also included in the testing environment, and these were used to keep tabs on the system's functionality and behavior during the testing process. Through the use of these tools, any flaws or difficulties that surfaced during testing could be swiftly addressed and fixed by the development team. All things considered, the testing environment was extremely important in assuring the accuracy and dependability of the Med life (an online medicine delivery & emergency service provide system) and reliability of the test results.

For the test environment, the critical part of setting up comprises:

- System and applications
- Test data
- Database server
- Front-end running environment
- Client operating system
- Browser
- Hardware includes Server Operating system
- Network
- Required documentation, such as user manuals, installation instructions, configuration manuals, and reference documents.

5.4 Testing Implementation

For functional-based testing of a pharmacy web application, we employed the REACT JS unit test. We utilized Postman program to test APIs.

5.5 Test Results and Reports

Our testing results are excellent. It is an application with almost no bugs. We can apply more QA tools to it in order to increase accuracy. There is no perfect system. For real-time bug fixes, we'll work to improve the accuracy and efficiency of our project.

Chapter 6

Impact on Society & Environment

6.1 Impact on Society

The pharmacies in today's culture are not as modern or mechanized. If our solution is successfully executed, managing the entire pharmacy will be simple and advantageous for both administrators and patients. As there is less risk to meet in person, it will be very effective given the COVID19 situation. It will take a lot of time and money. With the ability to schedule appointments from home and without having to visit the hospital, it will save time, money, and make things easier for patients.

6.2 Impact on Environment

The social environment will be significantly impacted by this project. The immediate physical and social surroundings in which people live, or in which anything occurs or develops, is referred to as the social environment. It comprises the social groups and organizations an individual interacts with as well as the culture in which they were raised or currently reside. No environmental harm will result from our proposal.

CHAPTER 7

CONCLUSION & FUTURE SCOPE

7.1 Conclusion

Using HTML, CSS, JS, jQuery, Python, Django, and a SQLite database, a web application for a pharmacy was created. Doctors and Patients can register accounts here; the admin must authorize the registration before they can log in using their username and password. After that, patients can request appointments, which the admin will then authorize. Both the doctor and the patient will then be able to see the appointment on their dashboard. When making an appointment, the patient must describe the condition and choose their chosen doctor and department. Through a chat program, the doctor can consult the patient. A user's information can be updated by an admin. The doctor will keep a record of both present patients and patients who have been dismissed. The admin and doctor are granted the discretion to discharge. Following discharge, administration will produce a bill, which will be sent to the patient. The goal of our project was to allow patients and administrators to speak with doctors and schedule appointments online.

7.2 Future Scope

Our solution, a web application for a pharmacy, is very effective in lowering the risk of danger associated with face-to-face interactions. It is simple to use and will be useful to patients, physicians, and administrators. Although there are websites like TONIC, Popular, and Square in Bangladesh, they are just for private use and don't offer all the functions that ours does. Additionally, our project will be free to use with few restrictions for all hospitals and organizations. We want to update the following in the future.

REFERENCES

1. "TONIC Website"[Online]. Available:
<https://mytonic.com/en/about-tonic> [Accessed 03 August 2020]
2. "Concept: Use-Case Model" [Online]. Available:
<https://www.visualparadigm.com/guide/uml-unified-modelinglanguage/what-is-use-case-diagram/> [Accessed 03 August 2020]
3. "HTML," [Online]. Available:
<https://www.w3schools.com/html/> [Accessed 15 September 2022]
- 4.. "CSS," [Online]. Available:
<https://www.w3schools.com/css/> [Accessed 15 September 2022]
- "JavaScript," [Online]. Available:
<https://www.w3schools.com/js/> [Accessed 27 June 2021]
5. "reactjs," [Online]. Available:
<https://reactjs.org/> [Accessed 19 October 2021]
6. "nodejs," [Online]. Available: <https://nodejs.org/en/> [Accessed 7 August 2022]
- 8.. "expressjs," [Online]. Available:
<https://expressjs.com/> [Accessed 11 September 2022]
9. "mongodb," [Online]. Available:
<https://www.mongodb.com/home> [Accessed 23 May 2022]
10. <https://codenboxautomationlab.com/black-box-testing-technique/>
11. <https://www.scaler.com/topics/white-box-testing/>
12. <https://blog.aotify.com/what-is-unit-testing>

MedLife

ORIGINALITY REPORT

25% SIMILARITY INDEX	22% INTERNET SOURCES	1% PUBLICATIONS	13% STUDENT PAPERS
--------------------------------	--------------------------------	---------------------------	------------------------------

PRIMARY SOURCES

1	dspace.daffodilvarsity.edu.bd:8080 Internet Source	17%
2	Submitted to Daffodil International University Student Paper	1%
3	Submitted to Stadio Holdings Student Paper	1%
4	Submitted to Softwarica College Of IT & E-Commerce Student Paper	1%
5	Submitted to University of Portsmouth Student Paper	1%
6	Submitted to Republic of the Maldives Student Paper	1%
7	Submitted to Universidad de León Student Paper	1%
8	Submitted to colorado-technical-university Student Paper	1%
9	Submitted to Alliance University Student Paper	<1%

