FC6P01 Project

Final Report

E Healthcare – Online Consultation And Medical Subscription

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Declaration

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Dedication

Mr. Isuru wikramapala, who aided and guided me to successfully finish the project work, is specifically thanked in the final project.

In addition, I'd like to dedicate my endeavor to my parents, who have always provided the resources, encouragement, and moral support we needed to meet all of our demands. It is a tremendous support for me as I finish my work as well as for my friends, who have been giving me extra encouragement. I dedicate this effort with my gratitude and my best wishes.

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Abstract

The platform E-Healthcare - Online Consultation And Medical Subscription seeks to satisfy the rising demand for remote healthcare services as well as the need for a more efficient and easy healthcare delivery system. Patients are searching for methods to get medical services from the comfort of their own homes as technology advances. Simultaneously, healthcare providers are looking for methods to minimize the pressure on traditional healthcare institutions while also improving the overall efficiency of the healthcare delivery system. The platform was created with a user-centered design approach that prioritizes the needs and preferences of patients and healthcare professionals. The platform offers video conferencing, chat, file sharing, prescription administration, appointment booking, and payment processing. These features enable users to schedule virtual consultations with licensed medical professionals and obtain medical subscriptions for a variety of healthcare services.

To create the web-based application, the platform was built with Laravel, a PHP-based framework. A modular architecture was used to construct the platform, allowing for scalability and simplicity of maintenance. The user interface was created with the goal of being user-friendly and intuitive, resulting in a smooth and seamless user experience. Security and privacy were also important objectives in the platform's architecture, with industry-standard security mechanisms used to safeguard sensitive medical data. Patients and healthcare providers gave the site excellent comments after comprehensive user testing. According to the findings, the platform was well accepted by users, with a high level of satisfaction stated in terms of user experience, functionality, and dependability. Patients reported better access to healthcare services and higher levels of satisfaction with the quality of care they got. Meanwhile, healthcare professionals benefited from a reduction in the pressure on traditional healthcare institutions as well as enhanced healthcare delivery system efficiency.

The platform not only benefits consumers and healthcare professionals, but it also benefits the healthcare sector as a whole. The platform can lead to greater use of healthcare resources and improved patient outcomes by enhancing access to healthcare services and decreasing the pressure on traditional healthcare institutions. This can lead to higher patient satisfaction, lower healthcare expenditures, and a more efficient and effective healthcare delivery system in the long run.

Finally, the E-Healthcare - Online Consultation And Medical Subscription platform provides a crucial answer for the future of healthcare delivery. The platform gives patients fast and efficient access to virtual medical consultations and medical subscription services. It helps patients, healthcare providers, and the healthcare sector as a whole. Its continuing development and implementation will assist to enhance the quality of care and patient outcomes, making it a key step toward a more efficient and effective healthcare delivery system.

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Abbreviations

1. UX - User Experience
2. UI - User Interface
3. ERD - Entity Relationship Diagram
4. ASD - Agile Software Development
5. SDLC - Software Development Life Cycle
6. RAM - Random Access Memory
7. Blade - Laravel's template engine
8. Eloquent - Laravel's ORM
9. Artisan - Laravel's CLI tool
10. Route - URL mapping in Laravel
11. Middleware - Middle layer in Laravel to handle HTTP requests.
12. Service Provider - A class in Laravel that bootstraps the application.
13. SQL - Structured Query Language.

Chapter 1

Introduction

E-healthcare is the use of electronic communication and information technology to provide health-related services and information. It is also known as digital health or telemedicine. This includes the use of digital tools such as computers, smartphones, and telecommunication systems to aid in healthcare delivery, management, and communication. With the rapid advancement of technology and the increasing demand for healthcare services, e-healthcare is gaining popularity to improve access to healthcare and make it more convenient and efficient for patients. Online medical consultation and subscription services are some of the most popular e-healthcare delivery methods. Through a computer or mobile device, these technologies enable patients to consult with medical professionals and get medical care remotely. This can cover a wide range of services like access to medical data, prescription renewals, and video consultations with doctors and other healthcare providers.

Patients normally need to register and set up an account in order to use online consultation and medical subscription services, which can be accessed through a website or mobile app. Patients can use this to contact their healthcare team and book appointments. In order to better understand their health status and adhere to their treatment plan, patients can access their medical records, lab results, and other information through the system.

Patients can access healthcare more easily and conveniently thanks to online consultation and medical subscription services, which is one of its main advantages. For instance, patients can contact a physician from the convenience of their own home, which can be very useful for people who have mobility challenges or reside in distant places. By eliminating the need for in-person visits and freeing up resources for more urgent situations, these solutions can also assist ease the strain on healthcare systems.

In general, online consultation and medical subscription systems are a significant component of the developing e-healthcare industry and are helping in enhancing patient convenience and efficiency while also enhancing access to healthcare.

Goals

The creation of an online platform that enables people to simply and remotely access healthcare services is the aim of an e-healthcare initiative that involves online consultation and medical subscriptions. Giving patients internet access to licensed medical professionals who can provide medical advice, diagnosis, treatment, and prescription renewal services is one way to do this. By giving patients access to their medical history, lab results, and other health data, the online platform could help people better manage their health. By encouraging preventive care and early diagnosis of health issues, the project should also seek to enhance patient outcomes and lower healthcare costs. The project should create a safe online platform that abides by applicable data protection laws in order to guarantee patient privacy and security. By offering a user-friendly online platform and a personalized healthcare experience, the initiative should also seek to increase patient participation and happiness. The project can increase access to healthcare and increase the effectiveness of healthcare delivery by allowing medical staff to care for more patients remotely while easing the pressure on physical healthcare facilities.

Aim & Objectives

Aims

The aim of the E Healthcare - Online Consultation And Medical Subscription is to provide patients with an effective and comfortable option for healthcare delivery. With the rising need for accessible and cheap healthcare, this system provides a novel approach to medical consultation and treatment. The primary goal is to expand access to excellent healthcare services, particularly for people living in distant or disadvantaged regions who encounter impediments to physical visits to healthcare professionals. Through the use of technology, this system will enable people to seek medical advice and treatment from healthcare specialists in real time. Patients may make appointments, get consultations, and get treatment prescriptions all from the convenience of their own homes. This can also assist relieve strain on physical healthcare facilities, making it simpler for patients to get care.

The E Healthcare system promises to provide a safe and efficient platform for maintaining medical information in addition to enhancing access to healthcare. The system will collect and manage patient medical histories, giving healthcare practitioners access to the information and allowing them to make educated decisions regarding the patient's care. The system's online subscription component also sends individuals frequent medical check-ups and reminders, encouraging a proactive attitude to their healthcare and aiding in the prevention of ailments.

For example, a remote video or phone consultation service offered by an online consultation system enables patients to speak with a doctor without having to travel to a physical office, saving them both time and money. Instead of having to take time off work to visit the clinic during business hours, they can schedule the consultation at a time that is convenient for them. By reserving resources for more urgent cases, increases the patient's access to healthcare while also reducing the load on healthcare systems.

Objectives

The E Healthcare - Online Consultation And Medical Subscription aims to improve patient access to excellent healthcare, streamline medical consultations, and improve the medical subscription process.

1. The primary objective is to provide patients a simple and easy-to-use platform for online medical consultations. Patients will be able to communicate with medical specialists from the comfort of their own homes, saving time and money normally spent driving to a doctor's office.
2. The second objective is to improve the efficiency of medical consultations. Patients will be able to offer pertinent medical information, such as their medical history and present symptoms, in a more structured and faster manner if the consultation process is digitized. This will assist medical practitioners in making better informed judgments, hence enhancing overall care quality.
3. Finally, the final objective is to enhance the process of medical subscription. Patients will be able to manage their medical subscriptions with simplicity by combining all medical

subscriptions into a single platform, including renewing and upgrading their subscriptions as needed. This will improve the entire experience for patients by making the medical subscription process more efficient and user-friendly.

The objectives of the E Healthcare - Online Consultation And Medical Subscription system are to address the demands of both patients and healthcare practitioners. The following are the precise goals:

- **Convenient and accessible healthcare delivery:** The system will allow people to obtain medical consultations and treatments online, minimizing the need for actual visits to healthcare institutions. This will enhance access to quality healthcare services, particularly for people living in distant or underdeveloped locations.
- **Efficient medical record management:** The system will store and maintain patient medical histories, allowing healthcare practitioners to access the information and make educated decisions regarding patient treatment. This will boost patient involvement in their own healthcare and improve the overall quality of medical care.
- **Proactive healthcare promotion:** The system will provide a medical subscription service that will include routine check-ups and reminders. This will aid in the prevention of diseases and enhance patients' overall health.
- **Improved patient-provider communication:** The system will serve as a platform for effective communication between patients and healthcare professionals, enabling a more collaborative and informed approach to medical care. This will enhance patient outcomes and overall healthcare delivery quality.

By achieving these goals, the E Healthcare - Online Consultation And Medical Subscription system will increase the accessibility, quality, and convenience of healthcare delivery for consumers while also providing healthcare practitioners with the resources they need to offer effective and efficient treatment.

Motivation

The E Healthcare - Online Consultation And Medical Subscription system was created in response to the growing need for accessible and efficient healthcare services. People lead hectic lifestyles in today's fast-paced world, making it difficult to contact a doctor for routine check-ups or even for ordinary medical conditions. The traditional healthcare system also lacks the ability to give patients with comprehensive and ongoing treatment. The E Healthcare system intends to address these challenges by offering an online medical consultation platform as well as a full medical subscription service. This technology will give patients access to a network of healthcare providers, allowing them to consult with a doctor or specialist from the comfort of their own homes. It will also allow people to securely maintain their medical information online, making it simpler for healthcare practitioners to access their medical history and deliver the best possible treatment. Furthermore, the medical subscription service will provide consumers a variety of perks, such as individualized healthcare plans, frequent check-ups, and preventative care reminders.

The use of technology in healthcare has proved to be helpful in improving patient outcomes and lowering healthcare expenditures. The E Healthcare system will also be able to enhance patient outcomes by giving fast and accurate information to healthcare practitioners. The platform will also assist to cut healthcare expenditures by eliminating the need for in-person consultations and enhancing the efficiency of the healthcare system. Furthermore, the usage of telemedicine and medical subscription services will benefit persons who reside in distant places with restricted access to healthcare services. The E Healthcare system will allow people to receive high-quality healthcare services without having to travel large distances. Furthermore, the approach would aid senior people who may have mobility challenges and find it difficult to visit a doctor in person.

Finally, the E Healthcare - Online Consultation And Medical Subscription system was created to meet the rising need for accessible and efficient healthcare services. The system would give consumers access to a network of healthcare professionals, allow them to securely maintain their medical information online, and provide a full medical subscription service. The system will use technology to enhance patient outcomes, lower healthcare costs, and give access to high-quality healthcare services for those who reside in distant places or have mobility challenges.

Overview

The technological aspect of e-healthcare entails the use of digital technology to provide healthcare services remotely, including online consultation and medical subscription. To help with healthcare delivery, management, and communication, this includes using various digital tools like computers, cellphones, and telecommunications systems. The technical field includes the creation and application of online platforms that let patients consult with doctors and receive medical treatment from a distance. To access healthcare services including medical data, prescription renewals, and video consultations with doctors and other healthcare providers, patients must register on the platforms and create accounts. The technical field of e-healthcare is developing quickly and has a great deal of potential to increase patient convenience and efficiency while also enhancing access to healthcare. To build efficient and user-friendly platforms that satisfy the demands of patients and healthcare professionals, a mix of technical proficiency, healthcare understanding, and user-centered design is needed.

Chapter 2

Background Study

The rise of E Healthcare - Online Consultation and Medical Subscription is a perfect illustration of how technological advancements have led to substantial advancements in the healthcare industry. This healthcare delivery paradigm seeks to offer patients a more convenient and accessible alternative to traditional in-person medical appointments. Medical consultations and treatments can now be delivered remotely thanks to the usage of digital platforms and telemedicine, reducing the need for patients to physically visit a healthcare provider. With the growing demand for virtual healthcare services, it is more crucial than ever to grasp the history and evolution of the E Healthcare - Online Consultation and Medical Subscription model. This background research will provide a detailed analysis of the historical context, current state, and future trends in online healthcare, as well as emphasize the difficulties and opportunities that lie ahead. This study intends to provide insights into the potential impact of this novel method to healthcare delivery by investigating the emergence and evolution of the E Healthcare - Online Consultation and Medical Subscription model.

Literature Review

The E Healthcare – Online Consultation And Medical Subscription is a novel concept that is aimed at improving the way healthcare services are delivered to patients. With the advent of technology and the growing need for accessible and convenient medical services, online consultation and medical subscriptions have become increasingly popular. In this literature review, we will discuss the current state of the healthcare industry, the need for online consultations, the various benefits of online consultation, and the various challenges that this technology faces.

One of the major challenges faced by the healthcare industry is the growing shortage of healthcare professionals and the increasing demand for their services. As a result, many patients are unable to receive the medical care they need in a timely and effective manner. Online consultations provide a solution to this problem by allowing patients to access medical care from the comfort of their own homes. With the help of technology, patients can easily connect with healthcare professionals and receive consultations, diagnose their conditions, and receive treatment recommendations. (Kuno, 2023)

In addition to being convenient and accessible, online consultations have several other benefits. Firstly, online consultations are typically more cost-effective than traditional in-person consultations. This is because online consultations do not require the use of physical facilities and medical equipment, which can be expensive to maintain. Secondly, online consultations are more flexible and can be scheduled at a time that is convenient for the patient. Thirdly, online consultations can help reduce the risk of spreading infections, since patients do not have to physically visit medical facilities.

However, online consultations are not without their challenges. One of the biggest challenges is ensuring the quality and safety of online medical care. This involves ensuring that patients have access to licensed and qualified healthcare professionals and that their privacy and personal information is protected. Additionally, there are concerns about the security of online medical records and the potential for unauthorized access to these records. (Kuno, 2023)

Another challenge facing online consultations is the need to ensure the interoperability and compatibility of different healthcare systems. This is particularly important when it comes to the exchange of medical records and other critical information between different healthcare providers. Finally, there is a need to address the digital divide, so that patients who are living in rural and remote areas have access to online consultations.

In conclusion, online consultations and medical subscriptions have the potential to revolutionize the way healthcare services are delivered to patients. Despite the challenges, the benefits of online consultations make it a promising technology that has the potential to significantly improve the quality and accessibility of healthcare services. It is important to continue to research and develop new solutions to the challenges facing online consultations, so that this technology can be used to improve the health and well-being of people around the world. (Breton, 2021)

E-Healthcare services have been gaining popularity in recent years, as they offer patients the ability to access healthcare remotely and conveniently. This literature review examines the impact of E healthcare services, including online consultations and medical subscriptions, on healthcare delivery and management. The review focuses on the benefits of E healthcare services, such as improved access to care, increased patient engagement, and reduced costs, as well as the challenges

and limitations, such as data privacy and security concerns, cultural and social barriers, and the need for regulations to ensure patient safety and quality of care. The review also discusses the potential impact of technology advancements on the future of E healthcare services.

Introduction: The growth of digital technologies has led to the development of E healthcare services, which offer patients the ability to access healthcare remotely and conveniently. This literature review focuses on the impact of two types of E healthcare services, online consultations and medical subscriptions, on healthcare delivery and management. (Breton, 2021)

Benefits of E healthcare Services: Numerous studies have shown the benefits of E healthcare services, including improved access to care, increased patient engagement, and reduced costs. Online consultations have been shown to improve health outcomes, increase patient satisfaction, and reduce the spread of infectious diseases. Medical subscriptions have been shown to increase patient engagement and promote preventive care, leading to improved health outcomes.

Challenges and Limitations: Despite the benefits of E healthcare services, there are also challenges and limitations that need to be addressed to ensure patient safety and quality of care. These challenges include data privacy and security concerns, the need for reliable internet connections, and cultural and social barriers, such as patient attitudes towards digital technology and privacy. Impact of Technology Advancements: The future of E healthcare services is expected to be shaped by advancements in technology, such as artificial intelligence and virtual reality. These advancements have the potential to transform the healthcare industry by improving access to care, reducing costs, and enhancing patient engagement. (Sandars, 2020)

Conclusion: This literature review highlights the impact of E healthcare services, including online consultations and medical subscriptions, on healthcare delivery and management. The review highlights the benefits of E healthcare services, as well as the challenges and limitations that need to be addressed. The future of E healthcare services is expected to be shaped by advancements in technology, which have the potential to transform the healthcare industry. (Sullivan, 2021)

A literature review of the e-healthcare industry has shown that the rise of online consultations and medical subscription services has been driven by a number of factors, including the increasing availability of technology, changing consumer preferences and the need to improve access to healthcare services. The trend has led to a variety of new business models, including telemedicine

platforms, virtual clinics and medical subscription services, which offer a range of healthcare services to consumers through the internet. (calleja, 2023)

One key advantage of these services is improved access to healthcare for people in remote or underserved areas, where access to traditional healthcare services may be limited. Additionally, online consultations and medical subscriptions offer the convenience of being able to receive healthcare services from the comfort of one's own home.

Studies have shown that online consultations and medical subscriptions have had positive impacts on patient outcomes, including improved diagnosis and treatment, increased patient satisfaction and reduced healthcare costs. However, some concerns have been raised about the quality and safety of care provided through these services, and the need for appropriate regulation and oversight.

Overall, the literature suggests that online consultations and medical subscriptions have the potential to improve access to and the quality of healthcare services, but careful consideration is needed to ensure that they are used in a safe and effective manner. (Han, 2020)

e-healthcare, online consultations, and medical subscriptions:

Adoption rate: Studies have shown that the adoption rate of online consultations and medical subscriptions has been increasing, particularly among younger and tech-savvy populations.

Barriers to adoption: Despite the benefits, there are still some barriers to the widespread adoption of e-healthcare services, including concerns around privacy and security, the quality of care provided, and the need for regulation and oversight.

Regulation and oversight: There has been debate about the need for regulation and oversight of online consultations and medical subscriptions to ensure patient safety and quality of care. (LC, 2021) This has led to some countries introducing regulations, while others have yet to establish a clear regulatory framework.

Impact on traditional healthcare: Some studies have shown that e-healthcare services have had a positive impact on traditional healthcare services, by reducing pressure on hospitals and primary care services. (LC, 2021)

Comparison with traditional healthcare: Studies have compared the quality of care and patient outcomes between traditional healthcare and e-healthcare services and found that, in many cases, online consultations and medical subscriptions can provide comparable care to traditional healthcare.

Future trends: There are a number of emerging trends in e-healthcare, including the use of AI and machine learning to improve diagnosis and treatment, the integration of wearable technology and digital health tools, and the increasing use of telemedicine in low-resource settings.

This information could help you build a comprehensive picture of the current state of e-healthcare, online consultations, and medical subscriptions, and the challenges and opportunities associated with these services. (SM, 2022)

The literature review on e-healthcare, online consultations, and medical subscriptions suggests that the growth in these services is driven by factors such as increased access to technology, changing consumer preferences, and the need to improve access to healthcare. The trend has led to various new business models, including telemedicine platforms, virtual clinics, and medical subscription services. The benefits of e-healthcare services include improved access to healthcare for people in remote or underserved areas, increased patient satisfaction, and reduced healthcare costs. However, concerns have been raised about the quality and safety of care provided through these services, leading to the need for regulation and oversight. The literature suggests that while e-healthcare services have the potential to improve access to and the quality of healthcare, careful consideration is needed to ensure they are used safely and effectively. (N, 2022)

The concept of e-healthcare, which is the use of digital technologies and services to improve the delivery of healthcare services, has gained increasing traction and recognition over the past decade. This includes the adoption of online consultations and medical subscriptions, which are becoming increasingly popular among patients and healthcare providers alike.

This literature review will focus on the effects of online consultations and medical subscriptions on the healthcare sector, with a focus on the benefits, challenges, and implications. First, we will review the key characteristics of online consultations and medical subscriptions. Secondly, we will explore the benefits of these services for patients, healthcare providers and the healthcare sector. Thirdly, we will examine the challenges and implications associated with the implementation of

online consultations and medical subscriptions. Finally, we will discuss the implications for the future of e-healthcare. (Vihan, 2020)

To begin, online consultations and medical subscriptions can provide convenience and ease of access to healthcare services. With online consultations, patients no longer need to physically visit a medical practitioner, instead they can access healthcare services remotely and securely. This can be particularly beneficial for those who need regular healthcare appointments, as they no longer need to take time out of their day to physically attend appointments. Similarly, medical subscriptions can provide additional convenience and access as they allow patients to securely access healthcare services and receive regular updates on their medical conditions, without the need for an appointment.

The implementation of online consultations and medical subscriptions can also provide numerous benefits for healthcare providers. For example, these services offer healthcare providers the opportunity to remotely assess and diagnose patients, which can improve the speed and accuracy of their medical decisions. Additionally, healthcare providers can also use these services to remotely monitor the health of their patients, providing more efficient and effective healthcare services.

Furthermore, both online consultations and medical subscriptions can bring a range of benefits to the healthcare sector. These include improved access to healthcare services, increased efficiency and accuracy of medical decisions, better patient outcomes, and cost savings. Additionally, these services can also reduce the burden on healthcare systems, as they reduce the need for physical appointments and decrease the chances of medical errors. (Calleja, 2022)

The E-Healthcare - Online Consultation and Medical Subscription system literature review entails assessing and summarizing existing research on the subject. The goal of the literature study is to offer a complete understanding of the current state of knowledge on the topic, including the system's merits and limitations, variables influencing its acceptance and implementation, and patient and healthcare provider experiences with the system. To inform future research and increase understanding of the E-Healthcare - Online Consultation and Medical Subscription system, the literature review should critically evaluate research methodology and study quality, as well as identify gaps in existing research. (Wootton, 2020)

Similar Systems

E-Healthcare, some similar systems, products, solutions, and theories include:

1. **Telemedicine platforms:** Telemedicine platforms like Teladoc Health, Doctor on Demand, Heal, and Amwell offer virtual medical consultations with licensed healthcare providers through video, phone, or app.
2. **Medical Subscription Services:** Services like Lemonaid provide online consultations, telemedicine, and prescriptions through a monthly or annual subscription model.
3. **Artificial Intelligence in Healthcare:** AI-powered systems like IBM Watson Health and Google DeepMind use machine learning algorithms to assist healthcare professionals in diagnosing and treating patients.

Here are the 3 main existing similar systems and their main/advanced functionalities:

1. **Teladoc Health:** Teladoc Health offers virtual medical consultations 24/7, with a network of over 3,000 licensed healthcare providers. It also has a virtual care platform for employers, health plans, and healthcare systems.

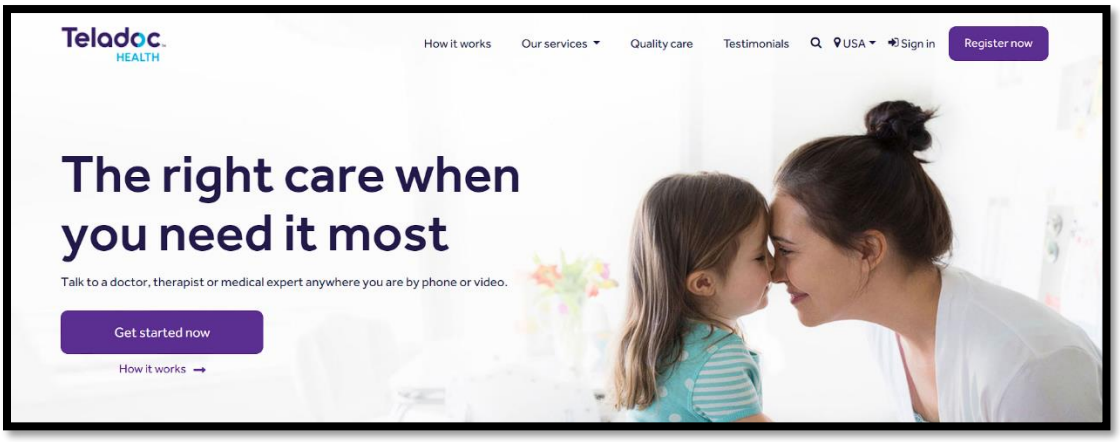


Figure 1 Similar system

Teladoc Health is a telemedicine platform that offers patients virtual medical consultations. It was established in 2002 and is based in Purchase, New York. Teladoc Health, which has a network of over 3,000 qualified healthcare providers, provides 24/7 access to virtual medical consultations through phone, video, or smartphone. It also serves as a virtual care platform for companies, health plans, and healthcare systems, with the ability to integrate with electronic medical records (EMRs)

and telehealth equipment. Teladoc Health aspires to make healthcare more accessible and convenient for people by minimizing the need for in-person doctor's office visits.

2. **Doctor on Demand:** Doctor on Demand provides virtual medical consultations with licensed healthcare providers, as well as behavioral health services. It also offers integrations with electronic medical records (EMRs) and telehealth devices.

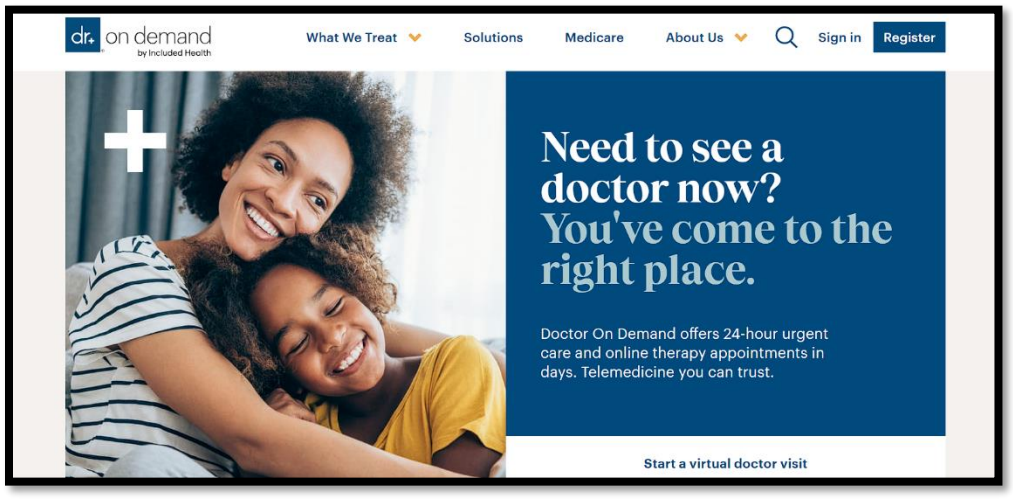


Figure 2 Similar system 2

A telemedicine network called Doctor on Demand links individuals with qualified healthcare professionals for online medical consultations. The business was established in 2012, and its main office is in San Francisco, California. Patients may use its platform to get virtual medical consultations with certified healthcare professionals through video, phone, or app. Doctor on Demand provides mental health treatments in addition to online medical consultations. Patients may have a seamless healthcare experience thanks to the platform's integration with electronic medical records (EMRs) and telemedicine tools. Medical on Demand wants to reduce the need for in-person doctor appointments by making healthcare more convenient and accessible for people.

3. **Heal:** Heal offers virtual medical consultations, house calls, and in-person visits with licensed healthcare providers. It also provides telemedicine equipment to patients, allowing for remote monitoring and virtual follow-up visits.

Here are the 3 main existing similar systems and their main/advanced functionalities:

Proposed Solution

The proposed E Healthcare solution is a comprehensive platform that provides patients with online consultation and medical subscription services. The platform is intended to increase patient access to quality healthcare by making it more easy and cheap. The following are the solution's essential components:

- Online Consultation: Patients can have video or audio consultations with licensed healthcare providers. Patients can now receive medical advice and treatment from the convenience of their own homes.
- Electronic Health Records (EHR): Patients can use the platform to securely store and access their personal health records. This covers any and all pertinent medical data, such as test results, diagnoses, and treatments.
- Prescription Management: Patients can request and manage their medications online, including prescription refills, through the Prescription Management system. This lowers the need for people to visit the pharmacy in person and promotes convenience.
- Integration of Telemedicine Equipment: The platform integrates with a variety of telemedicine equipment, such as wearable devices and home health monitoring tools. This allows healthcare professionals to remotely monitor patients' health and give more personalized care.
- Health and Wellness Education: The platform provides access to health and wellness educational tools and information. Patients can learn about a variety of health issues, treatments, and strategies to improve their general health and well-being.
- Individualized Health Advice: The platform employs data and analytics to provide patients with personalized health recommendations. Based on their specific health state and needs, this can include food recommendations, activity schedules, and treatment alternatives.
- Data Privacy and Security: To secure patient information, the platform is created with strict data privacy and security protections in place. Patients can be confident that their personal health information is kept private and safe.

The E Healthcare platform promises to increase access to quality healthcare and the patient experience by providing these services. Patients can receive medical care and support from the

convenience of their own homes, eliminating the need for in-person visits and increasing overall health and well-being.

Problem

With the growth of technology, the healthcare sector has undergone considerable transformation. Despite the tremendous advantages that technology has brought to the industry, many healthcare providers continue to encounter significant hurdles in providing effective and efficient medical services. Access to excellent healthcare services is one of the most serious concerns in healthcare. People in many locations, particularly in rural ones, have restricted access to medical treatment due to a lack of healthcare facilities and medical workers. Another issue confronting the healthcare industry is the rising demand for medical services. With an aging population and expanding populations in many nations, the demand for healthcare services has risen, putting a burden on healthcare professionals. This high demand has resulted in extended appointment wait times, prompting people to look for alternative medical treatments.

The employment of technology in healthcare is one answer to these problems. Online consultation and medical subscriptions have evolved as a new paradigm for healthcare delivery, giving consumers with an accessible and quick method to receive medical services. However, there are still certain obstacles that healthcare providers have when it comes to implementing these systems, such as the expense of implementation, the requirement for technical skills, and the challenges of data security. Despite these obstacles, there is significant interest in the usage of online consultation and medical subscriptions, with many healthcare providers examining this model as a method to improve their services. The goal of this project is to solve the issues that healthcare providers experience while implementing online consultation and medical subscription systems, and to develop a solution that will allow healthcare professionals to provide excellent medical services to patients via the use of technology.

The E Healthcare - Online Consultation And Medical Subscription program strives to give a comprehensive answer to the problems that healthcare practitioners encounter. The technology would enable healthcare practitioners to manage their medical services more efficiently while also providing patients with an accessible and quick option to receive medical services via online consultation. The system will assist to increase the accessibility of medical services and give patients with a better experience when it comes to receiving medical care by using technology.

Chapter 3

Work Completed

The Laravel-based E Healthcare platform was created to provide patients with online consultations and medical subscriptions. The platform has an easy-to-use interface that allows patients to plan appointments and view their medical records. Because the platform is connected with electronic health records, patient data is securely maintained and safeguarded from illegal access. The software has also simplified the appointment scheduling process, removing the need for manual scheduling and lowering the chance of errors. Furthermore, patients can access their medical history, which can be beneficial to both patients and medical providers. Overall, the Laravel-based E Healthcare platform has been built and provides an efficient solution for online consultations and medical subscriptions.

Project Management

The Agile project management methodology was chosen for E Healthcare project management. This methodology was chosen because it is well-suited to tasks that are fast-paced and constantly changing, such as software development. The Agile technique is excellent for the E Healthcare project because it stresses flexibility, cooperation, and regular feedback and modification.

The Agile technique was used for project planning, breaking the project down into smaller, manageable parts known as sprints. A sprint backlog, which includes a list of activities and features to be done during each sprint, was constructed. The project team held daily stand-up meetings to discuss progress, identify concerns, and make any necessary changes to the plan. The sprint reviews and retrospectives enabled the team to constantly improve their processes and the overall quality of the project.

The Agile methodology also places a premium on frequent communication and collaboration among team members, stakeholders, and the client. This was accomplished through the use of project management technologies such as JIRA and Trello, which provided real-time updates and collaboration, as well as through frequent stakeholder meetings where project progress was discussed and feedback was obtained.

Initial Project Plan

To begin, conduct research on various websites and become familiar with their functions before designing and developing the E-Healthcare - Online Consultation and Medical Subscription.

Type	Key	Summary	Status	Category	Assignee	Comm...
☑	EHC-8	System implementation	TO DO			Comments
☑	EHC-9	Testing	TO DO			Comments
☑	EHC-10	Bug Fixing	TO DO			Comments
☑	EHC-11	Final Report Submission	TO DO			Comments
☑	EHC-5	Interim Submission	IN PROGRESS			Comments
☑	EHC-6	System Backend	IN PROGRESS			Comments
☑	EHC-7	System Frontend	IN PROGRESS			Comments

Figure 3 List plan 2023.01.23

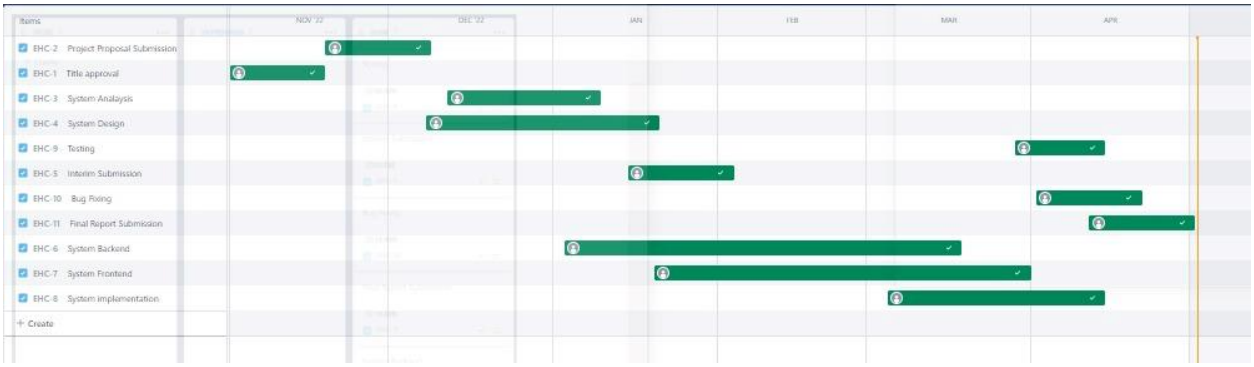


Figure 4 Timeline

The graphic below depicts the project's current status.

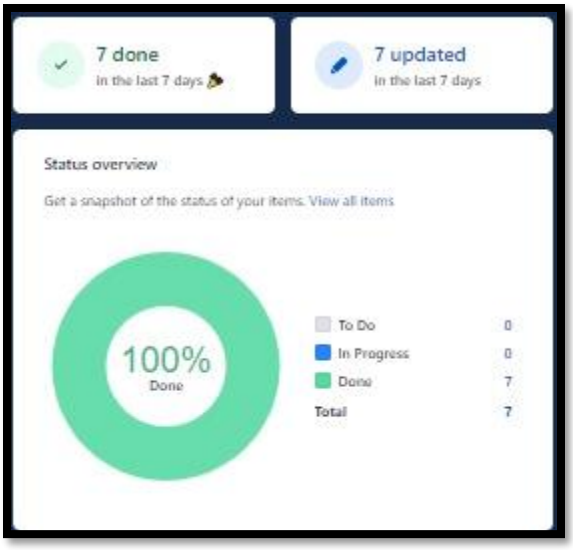


Figure 5 Status

The breakdown structure of the E-Healthcare – Online Consultation and Medical Subscription

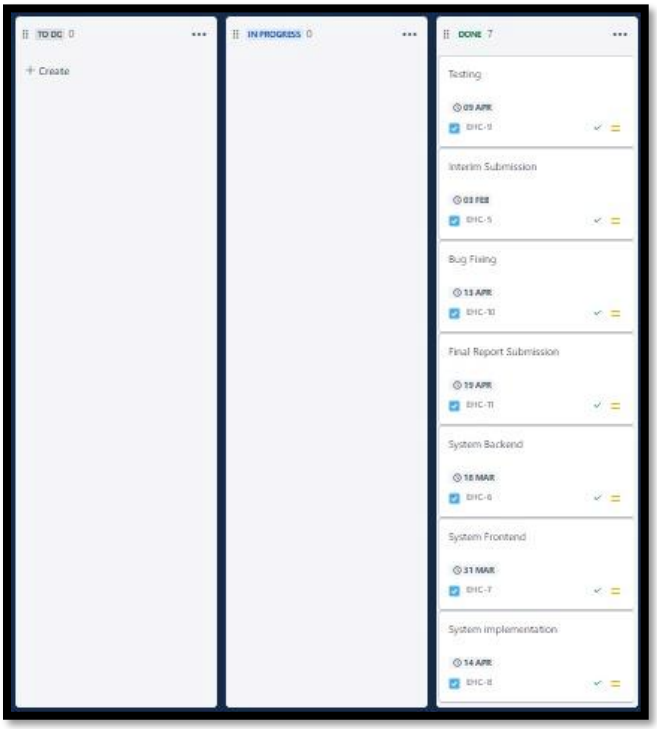


Figure 6 Breakdown structure

The main purpose of the project

The primary goal of the E Healthcare - Online Consultation And Medical Subscription project is to offer a platform for patients to get medical consultations and access medical services online. The platform intends to solve the barriers that people encounter in obtaining healthcare services, such as high wait times, restricted availability of medical personnel, and difficulty booking appointments. The website also intends to streamline the medical subscription process, making it more accessible and simple for patients. The initiative attempts to enhance patient outcomes and general satisfaction with the healthcare system by providing a holistic solution for healthcare services. Furthermore, the initiative intends to improve the efficiency and accessibility of healthcare services, making it simpler for people to control their health and obtain medical attention.

The achieved objectives

The E Healthcare - Online Consultation And Medical Subscription project's major goal is to create a comfortable and accessible platform for people to obtain medical care from the comfort of their own homes. The goal of this initiative is to eliminate the need for people to physically visit a doctor's office or hospital, hence lowering wait times and boosting access to medical treatment.

One of the project's primary goals is to increase patient satisfaction by offering a streamlined and user-friendly platform for online consultations. Patients will be able to arrange appointments, speak with their physicians, and view their medical information all from a single, centralized location thanks to the platform. This would enhance the overall patient experience by making it simpler for them to obtain the treatment they require while decreasing the stress and inconvenience associated with traditional healthcare delivery systems.

Chapter 4

Feasibility study

In recent years, there has been a trend in the healthcare business toward technology-driven solutions, such as online consultations and medical subscriptions. The purpose of this feasibility study is to determine the viability of an e-healthcare platform that offers online consultations and medical subscriptions.

- **Technical feasibility:** The platform's capacity to satisfy technical needs while also providing great user experience.
- **Operational feasibility:** The platform's ability to satisfy operational objectives while also providing a great user experience.
- **Economic feasibility:** The platform's capacity to produce revenue and achieve profitability.

Economic Feasibility

The cost-effectiveness of an online platform for medical subscriptions and consultations with doctors relies on a number of criteria, including:

- Costs associated with creating and implementing the platform, including those associated with hardware, software, and labor.
- The platform must have a consistent and transparent revenue plan, including subscription fees, service fees, and advertising.
- Running expenses: The platform has to be fully aware of continuing operating expenses such data storage, bandwidth, and technical support.
- Market demand: For the platform to be profitable, it must be able to draw in a sizable enough user base of patients and healthcare professionals.
- Effective competition with other e-healthcare providers and traditional healthcare providers is a requirement for the platform.
- Return on investment (ROI): The platform has to be well aware of the ROI it should anticipate to get and the timeframe for doing so.
- Scalability: The platform needs to be able to grow in terms of both users and services provided

- Regulations and insurance reimbursement guidelines: The platform must abide with all applicable laws, rules, and guidelines, including those governing telemedicine and insurance reimbursement guidelines, which may have an influence on income streams.

Overall, the capacity to successfully handle these and any other pertinent economic needs will determine if an e-healthcare platform is economically viable.

Operational Feasibility

An e-healthcare platform's operational feasibility for online consultations and medical subscriptions depends on a number of elements, including:

- User acceptance: The platform must be simple to use and offer both patients and healthcare professionals a satisfying experience.
- Healthcare provider availability: There must be enough competent healthcare providers on the platform to fulfill patient demand.
- Legal and regulatory compliance: The platform must abide by all applicable laws and rules, including those governing telemedicine and the licensing of healthcare practitioners.
- Reimbursement guidelines: The platform must include precise guidelines for compensating medical professionals and handling problems with insurance coverage.
- Patient medical information must be kept private and safe, and the platform must guarantee this.
- Business plan: The platform has to have a viable business plan with revenue streams and cost-control measures.
- System integration: The platform has to work seamlessly with current healthcare systems and procedures.
- Technical assistance: To address any potential problems, the platform must have sufficient technical support.

Overall, an e-healthcare platform's operational viability rests on its capacity to successfully handle these and any other pertinent operational criteria.

Technical Feasibility

The technical feasibility of an online platform for medical subscriptions and consultations depends on a number of criteria, including:

- Network infrastructure: For the smooth delivery of online consultations and subscriptions, dependable and quick internet access is essential.
- Platform security: To safeguard sensitive medical data and prevent unwanted access, the platform must have sufficient security mechanisms in place.
- Compatibility with current electronic medical records (EMR) systems: The platform should be able to connect to them and securely exchange medical data.
- Mobile compatibility: To reach a larger audience, the platform should be available on a variety of devices, including mobile devices.
- Scalability: As the user base expands, the platform should be able to accommodate the escalating user traffic and data storage needs.
- Regulation compliance: The platform must adhere to all applicable laws and standards, including the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA) (GDPR).

Overall, an e-healthcare platform's technological viability rests on its capacity to successfully handle these and any other pertinent technical needs.

Time feasibility

Projects in the field of electronic healthcare, like online consultation and medical subscription, must be time-feasible. It refers to the project's capacity to finish on schedule while achieving all project goals, such as the creation and introduction of an online platform for medical consultation and subscription services.

Project managers must set realistic and achievable deadlines for finishing all tasks, including creating, testing, and launching the platform, in order to ensure time feasibility. They must also make sure that all tasks are finished by the deadlines. This calls for thorough planning, good communication, resource allocation, and risk management throughout the course of the project. The success of an E Healthcare project depends on ensuring time feasibility because delays could lead to patients looking for alternate alternatives or suffering negative health effects from delayed access to medical care. To ensure the project's success and meet the needs of patients and other stakeholders, it is crucial to prioritize time feasibility and manage the timeline properly.

Cost feasibility

Cost feasibility for e-healthcare initiatives like online consultations and medical subscriptions is crucial for project success. Before distributing funds, it entails evaluating the project's viability, expenses, and advantages. Project managers must create a realistic budget that accounts for all costs related to the project's development, launch, and upkeep in order to achieve cost feasibility. This calls for precise cost estimation, efficient resource allocation, and effective communication with stakeholders. The company could face financial issues, a reduced return on investment, and project failure if cost feasibility is not ensured. Therefore, it is essential to put a priority on cost viability and manage the project's budget effectively in order to satisfy the needs of patients and stakeholders while preserving financial viability.

Scope feasibility

Scope feasibility for e-healthcare services like online consultations and medical subscriptions refers to in-depth technical analyses of the project's goals. This entails determining if the project scope, requirements, and specifications can be realistically achieved given the resources and restrictions that are available. The technical needs of the project, including the required infrastructure, software, and hardware, must be thoroughly analyzed by project managers to ensure scope feasibility. During the project's development and implementation phases, this analysis aids in identifying any potential restrictions, dangers, or difficulties. Effective scope feasibility allows project managers to make sure that the project's aims are in accordance with the overall strategy, goals, and mission of the company and that the project's scope is attainable within the allocated timeframe and budget.

Chapter 5

Design

Er Diagram

An ER (Entity-Relationship) diagram for E Healthcare – Online Consultation And Medical Subscription would represent the entities and relationships in the system, including:

Entities:

1. Patient: representing the users of the platform who book consultations and subscribe to medical plans.
2. Doctor: representing the medical professionals who conduct online consultations.
3. Consultation: representing the online consultations between patients and doctors.
4. Subscription Plan: representing the medical subscription plans available to patients.
5. Payment: representing the payments made by patients for medical subscriptions.

Cardinalities:

1. Patient has many Consultations (1: N)
2. Doctor has many Consultations (1: N)
3. Patient has many Subscription Plans (1:N)
4. Subscription Plan has many Payments (1: N)

Attributes:

1. Patient: ID, Name, Email, Phone, Address, etc.
2. Doctor: ID, Name, Email, Phone, Specialization, etc.
3. Consultation: ID, Date, Time, Status, etc.
4. Subscription Plan: ID, Name, Description, Price, etc.
5. Payment: ID, Amount, Date, Method, etc.

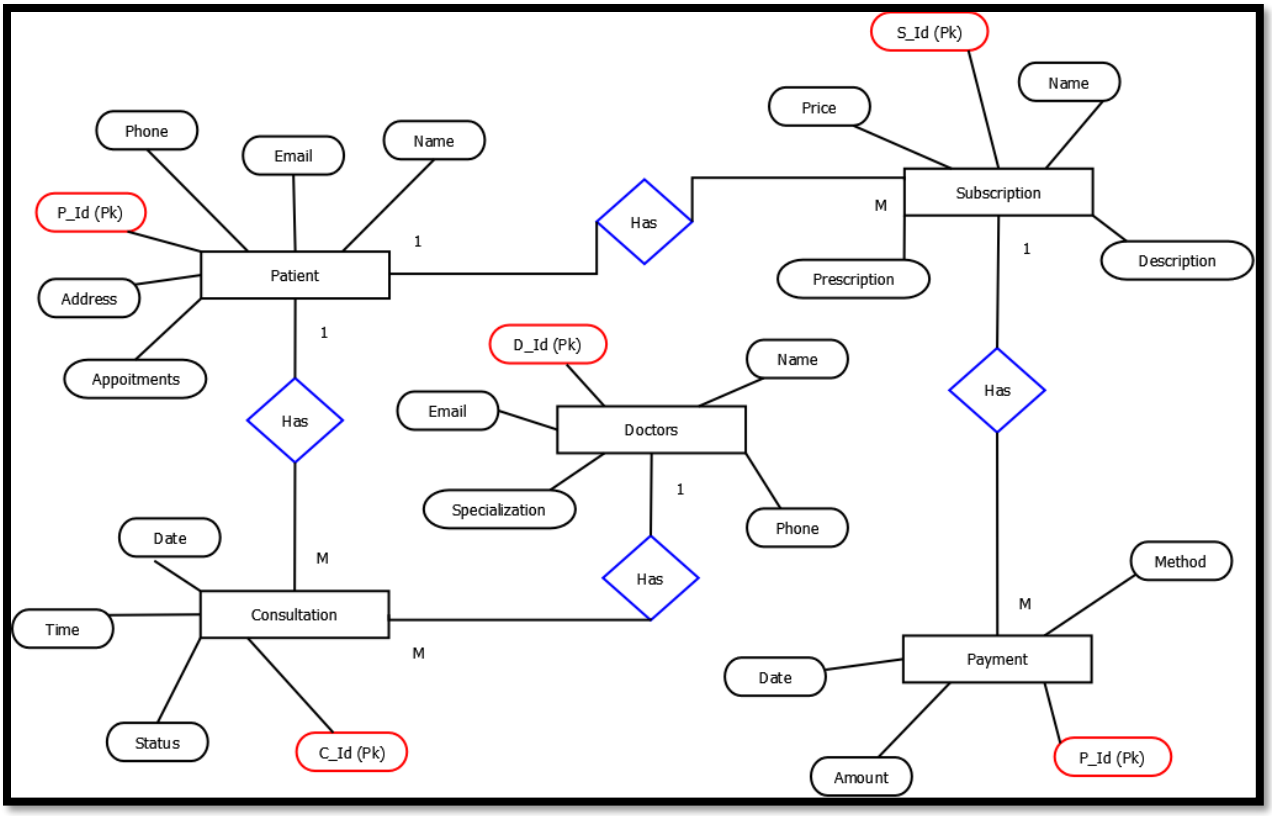


Figure 7 Er Diagram

Use case diagram.

A use case diagram for E Healthcare – Online Consultation And Medical Subscription would consist of the following components:

Actors:

1. Patients: who access the platform for online consultations and medical subscriptions.
2. Doctors: who provide online consultations to patients.
3. Administrators: who manage the platform and the medical subscriptions.

Use Cases:

1. Book Consultation: where a patient books an appointment with a doctor.
2. Conduct Consultation: where a doctor conducts an online consultation with a patient.
3. Manage Subscriptions: where administrators manage the medical subscriptions for patients.
4. Manage Platform: where administrators manage the platform, including the doctor and patient profiles.

Relationships:

1. The "Patients" actor initiates the "Book Consultation" and "Manage Subscriptions" use cases.
2. The "Doctors" actor initiates the "Conduct Consultation" use case.
3. The "Administrators" actor initiates the "Manage Platform" use case.
4. The "Book Consultation" use case is related to the "Conduct Consultation" use case, as the consultation is initiated by the patient booking an appointment.
5. The "Manage Subscriptions" use case is related to the "Manage Platform" use case, as the administrators manage the medical subscriptions through the platform.

This is a simple representation of the use case diagram for the E Healthcare – Online Consultation And Medical Subscription. It highlights the key components and relationships involved in the platform, and provides a clear understanding of how the system will be used by patients, doctors, and administrators.

Figure 8 Use case

Architectural/ Development model

The architectural/development model for the E Healthcare – Online Consultation And Medical Subscription could be based on the Model-View-Controller (MVC) pattern, which separates the application into three main components:

1. Model: represents the data and business logic of the application.
2. View: displays the data to the user.
3. Controller: handles user input and communicates with the model.

The following are some of the components that could be included in the development model of E Healthcare:

1. User Authentication: responsible for managing user authentication and authorization.
2. Consultation Management: responsible for managing online consultations, including booking appointments and conducting consultations.
3. Subscription Management: responsible for managing medical subscriptions, including subscription plans and payment processing.
4. Platform Management: responsible for managing the platform, including user profiles, doctor profiles, and administrative functions.
5. Data Access Layer: responsible for accessing and manipulating the data stored in the database.
6. UI/UX Layer: responsible for the design and user experience of the platform.

This is a high-level view of the architectural/development model for the E Healthcare – Online Consultation and Medical Subscription. The components are designed to work together to provide a seamless and efficient platform for online consultations and medical subscriptions. The MVC

pattern enables the development team to focus on one component at a time, ensuring a well-organized and manageable development process.

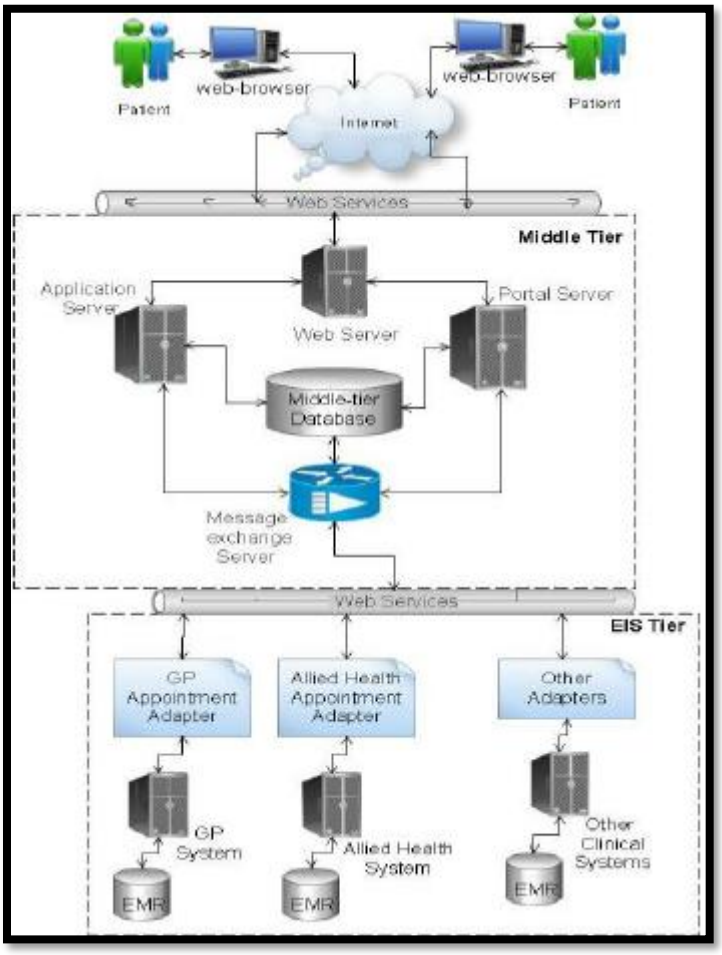


Figure 9 Architectural

Class Diagram

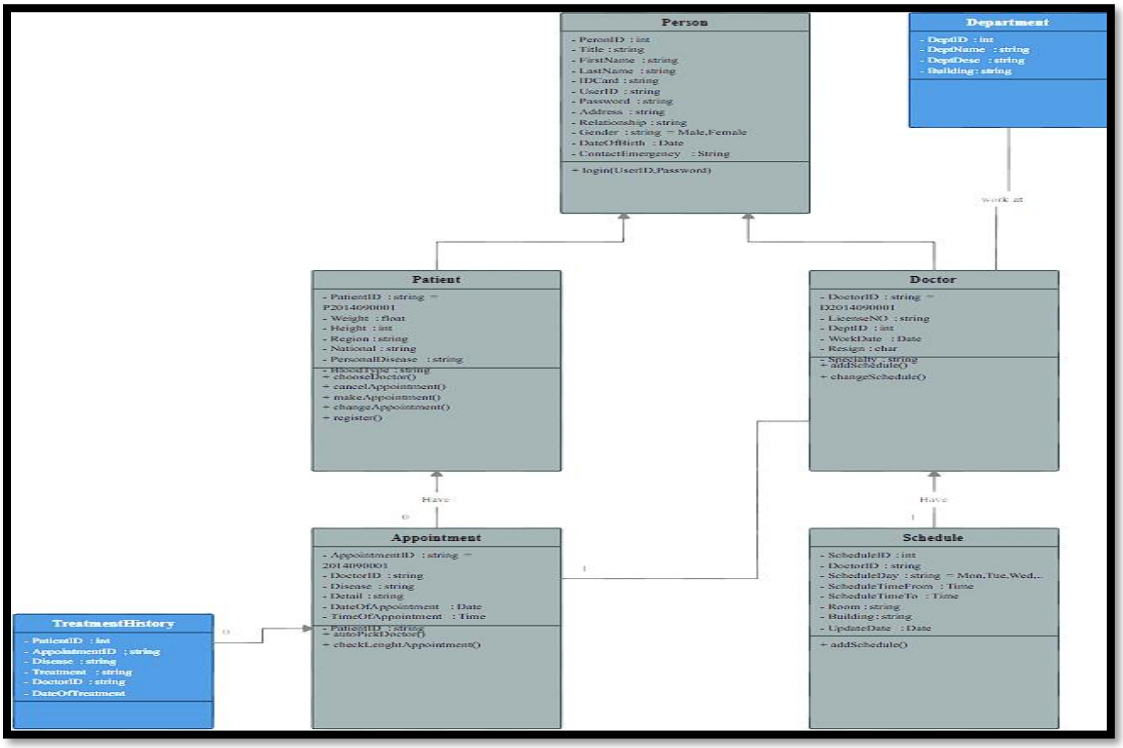


Figure 10 Class Diagram

Sequence Diagram

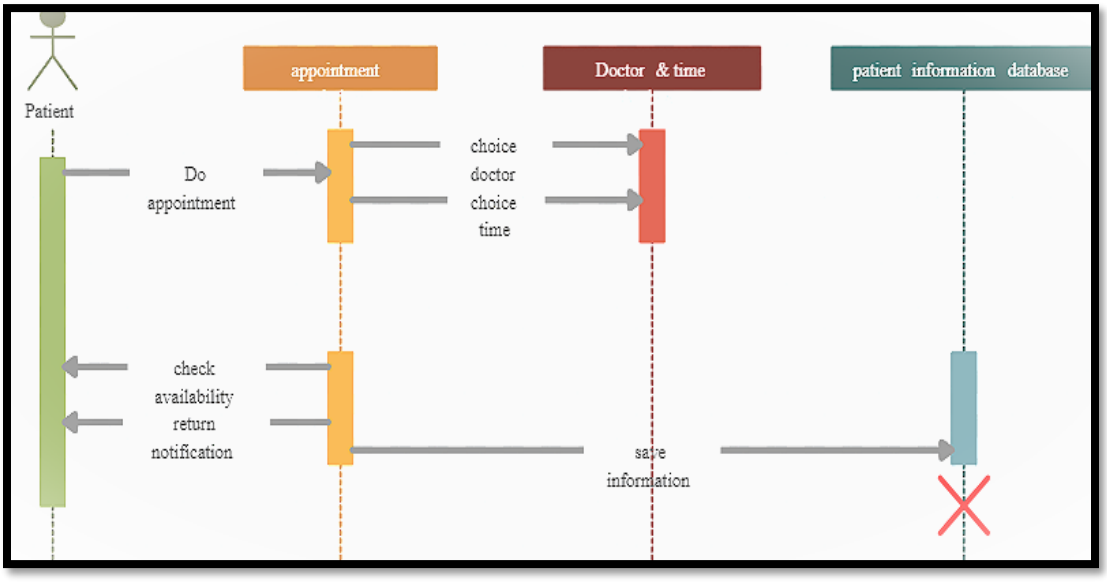


Figure 11 Sequence Diagram

Wireframes

Wireframes are simplified visual representations of a website or application's user interface. They are employed to inform stakeholders about layout and design concepts. For the E-Healthcare - Online Consultation and Medical Subscription, typical wireframes are shown below:

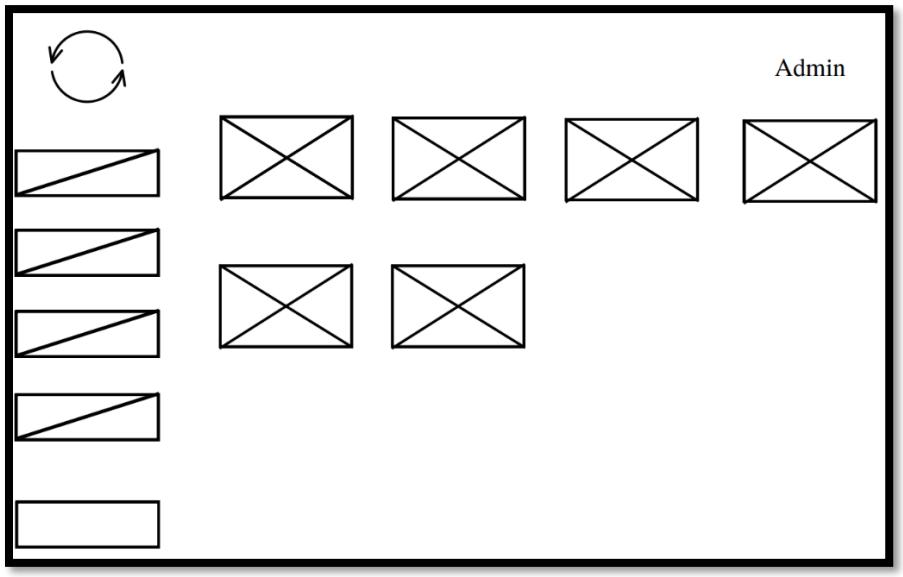


Figure 12 Dashboard Wireframe

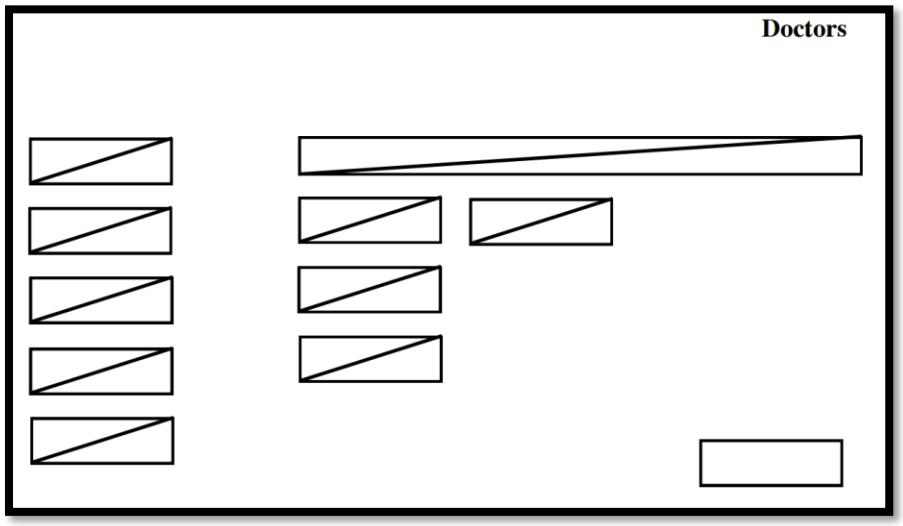


Figure 13 Doctors

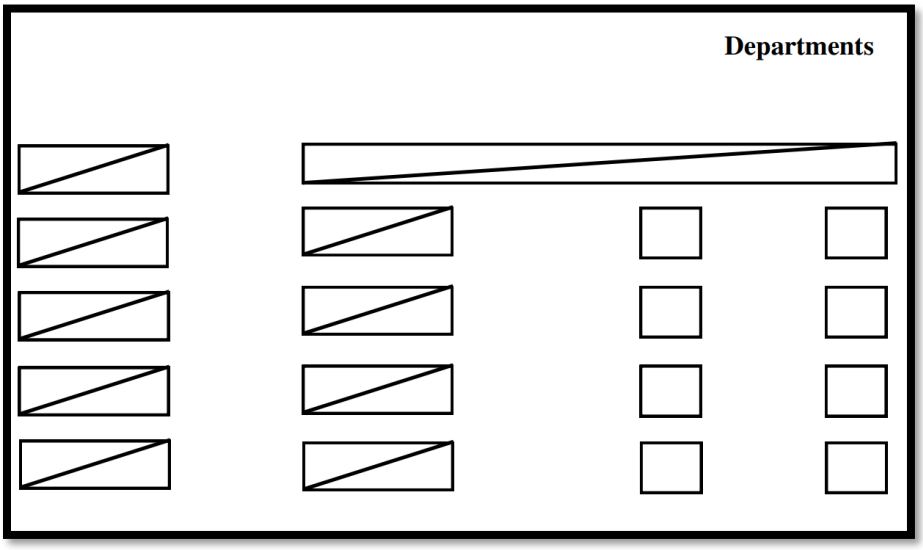


Figure 14 Department

Functional requirements

Functional requirements are the specific features or functions that a system must provide to meet the needs of its stakeholders. Examples of functional requirements for the E Healthcare – Online Consultation And Medical Subscription project include:

- **Patient registration and account management:** Patients should be able to create an account, update their personal information, and manage their medical history.
- **Online consultation:** Patients should be able to request and participate in virtual consultations with healthcare providers.
- **Medical subscription:** Patients should be able to subscribe to a package of medical services that includes consultations, tests, and treatments.
- **Secure payment system:** Patients should be able to make secure payments for their medical subscriptions and consultations.

Non-functional requirements

Non-functional requirements are the quality attributes that a system must have in order to meet the needs of its stakeholders. Examples of non-functional requirements for the E Healthcare – Online Consultation And Medical Subscription project include:

- **Security and privacy:** The system should protect patient data from unauthorized access, theft, and tampering.
- **User experience:** The system should be user-friendly and intuitive, allowing patients to easily access and manage their medical information.
- **Performance and scalability:** The system should be able to handle a high volume of users and transactions, and should respond quickly to user requests.
- **Compliance:** The system should be in compliance with relevant regulations and standards in the healthcare industry.

User requirements and System requirements

The user requirements for the E Healthcare – Online Consultation And Medical Subscription project include:

- Easy registration process for patients and doctors
- Secure and confidential storage of medical records and personal information
- Efficient scheduling and booking of appointments
- Secure payment options for medical subscriptions and consultations
- Access to a wide network of medical professionals
- User-friendly interface for patients and doctors to communicate

The system requirements for the E Healthcare – Online Consultation And Medical Subscription project include:

- Reliable and fast server for smooth and seamless operation
- Data storage systems for secure storage of patient and doctor records
- Efficient algorithms for appointment scheduling and booking
- High-level encryption and security measures to protect confidential information
- Integration with existing healthcare databases
- Mobile compatibility to allow patients to access services on the go.

Technical tools/ Backend & Frontend tools used.

- Laravel based project – For the Backend and frontend.
- Vs code – For the coding
- SQL for database
- MS project and Canva for designing diagrams.
- Jira
- PHP unit for testing

Hardware and third-party software requirements

A robust server system for data storage and management, a secure network infrastructure for data transmission, compatibility with various end-user devices such as desktops, laptops, smartphones, and tablets, video conferencing software for virtual consultations, integration with electronic health records (EHR) systems, and a payment processing system may be required for an e-healthcare platform for online consultations and medical subscriptions. These needs will vary based on the platform's size and complexity, as well as its functional requirements.

Hardware Requirements:

- Processor: Intel dual core or above
- Processor Speed: 1.0GHZ or above
- RAM: 1 GB RAM or above
- Hard Disk: 20 GB hard disk or above
- USB flash disk (At least 2GB)

Software Requirements:

- Operating system: Windows 7 or more
- Project Platform: PHP Framework
- IDE Tool (recommended): Sublime text
- Project Type: Web Application
- Database: MySQL

Perspective resources are divided into divisions and are given below

Admin Module:

- Admin Login Form/update profile/change password
- Admin Can Approved/Reject Doctor Registration Request
- Admin Can Check Doctor List Admin Can Check patient List
- Admin Can Add Daily Expenses & Monthly Expenses
- Admin Can Check Details Daily Monthly Expenses
- Admin Can See Check Appointment & Uncheck Appointment

Doctor Module:

- Doctor Login Form/Doctor Registration Form Doctor Can Update Profile & Change Password
- Doctor can reject appointment.
- Doctor Can Check Patient Appointment and take Fee
- Doctor can search patient appointment.
- Doctor can reject Appointment.

Patient Module:

- Patient Login Form/Patient Registration Form
- Patient Can Update Profile & Change Password
- Patient Can Send Appointment To The Doctor

Deliverables

The Laravel-powered e-healthcare platform for online consultations and medical subscriptions will give consumers a safe and simple method to obtain healthcare services from the comfort of their own homes. A web application for scheduling and attending virtual consultations with healthcare practitioners, a secure platform for storing and managing electronic health information, and a payment processing system for medical subscriptions and virtual consultation fees will be part of the platform. The backend system, built using Laravel and a relational database management system, will be strong and scalable, ensuring efficient data storage and maintenance. The frontend interface will be user-friendly and created with HTML, CSS, JavaScript, and Laravel's Blade template engine. The platform will also provide third-party service interfaces, such as Creating scheduling and appointment reminder software with Laravel's built-in API development tools. The e-healthcare platform's overall purpose will be to create a safe, user-friendly, and scalable platform for virtual healthcare consultations and medical subscriptions.

Deliverables	Date	Description
The Proposal of the project	30/11/2022	The proposal of the project LMS for special needs
The interim report	31/12/2022	40% of solution
Final report	03/05/2023	The final report with all the solutions

Table 1 Deliverables

Chapter 6

Implementation

An implementation of the e-healthcare system for online consultations and medical subscriptions can include the following components:

1. Patient portal: Patients can create an account, view their medical history, book appointments, and access telemedicine services.
2. Doctor portal: Doctors can access patient information, conduct virtual consultations, and prescribe medication if necessary.
3. Payment gateway: Patients can pay for online consultations and subscribe to ongoing medical services through a secure payment gateway.
4. Electronic medical records (EMR): All patient information and medical history is stored in a secure EMR system that is accessible to authorized healthcare providers.
5. Appointments scheduling: Patients can easily book appointments with their preferred doctors through the patient portal.
6. Telemedicine platform: The telemedicine platform enables virtual consultations between patients and doctors using audio, video, and messaging tools.
7. Data analytics: The system can collect and analyze data to improve patient outcomes and support clinical decision-making.
8. Compliance with relevant regulations and standards, such as HIPAA (Health Insurance Portability and Accountability Act) for data privacy and security.

Here the Important Codes

Codes For Admin

```
@extends('admin.layouts.master')

@section('content')

    <div class="page-header">
        <div class="row align-items-end">
            <div class="col-lg-8">


                <div class="page-header-title">
                    <i class="ik ik-command bg-blue"></i>
                    <div class="d-inline">
                        <h5>Doctors</h5>
                        <span>Available time</span>

                    </div>
                </div>
            </div>
            <div class="col-lg-4">
                <nav class="breadcrumb-container" aria-label="breadcrumb">
                    <ol class="breadcrumb">
                        <li class="breadcrumb-item">
                            <a href="../index.html"><i class="ik ik-home"></i></a>
                        </li>
                        <li class="breadcrumb-item"><a href="#">Doctor</a></li>
                        <li class="breadcrumb-item active" aria-current="page">Appointments</li>
                    </ol>
                </nav>
            </div>
        </div>
    </div>

    <div class="row justify-content-center">
        <div class="col-lg-10">
            @if (Session::has('message'))
                <div class="alert bg-success alert-success text-white" role="alert">
                    {{ Session::get('message') }}
                </div>
            @endif
            @if (Session::has('errMessage'))
                <div class="alert bg-danger alert-success text-white" role="alert">
                    {{ Session::get('errMessage') }}
                </div>
            @endif
            @foreach ($errors->all() as $error)
                <div class="alert alert-danger">
                    {{ $error }}

                </div>

            @endforeach


            <form action="{{ route('appointment.check') }}" method="post">
                @csrf

                <div class="card">
                    <div class="card-header">
                        Choose date
                        <br>
                        @if (isset($date))
                            Your timetable for:
                            {{ $date }}
                        @endif

                    </div>
                    <div class="card-body">
```

Figure 15 Codes For Admin

Routes

```php
// Home Page Routes
Route::get('/', 'FrontEndController@index');
Route::get('/new-appointment/{doctorId}/{date}', 'FrontEndController@show')->name('create.appointment');

Route::get('/dashboard', 'DashBoardController@index');

Route::get('/home', 'HomeController@index');

Auth::routes();

// Patient Routes
Route::group(['middleware' => ['auth', 'patient']], function () {
    // Profile Routes
    Route::get('/user-profile', 'ProfileController@index')->name('profile');
    Route::post('/user-profile', 'ProfileController@store')->name('profile.store');
    Route::post('/profile-pic', 'ProfileController@profilePic')->name('profile.pic');

    Route::post('/book/appointment', 'FrontEndController@store')->name('book.appointment');
    Route::get('/my-booking', 'FrontEndController@myBookings')->name('my.booking');
    Route::get('/my-prescription', 'FrontEndController@myPrescription')->name('my.prescription');
});
// Admin Routes
Route::group(['middleware' => ['auth', 'admin']], function () {
    Route::resource('doctor', 'DoctorController');
    Route::get('/patients', 'PatientListController@index')->name('patients');
    Route::get('/status/update/{id}', 'PatientListController@toggleStatus')->name('update.status');
    Route::get('/all-patients', 'PatientListController@allTimeAppointment')->name('all.appointments');
    Route::resource('/department', 'DepartmentController');
    Route::get('/pharmacy', 'PharmacyController@index')->name('pharmacy');
});
// Doctor Routes
Route::group(['middleware' => ['auth', 'doctor']], function () {
    Route::resource('appointment', 'AppointmentController');
    Route::post('/appointment/check', 'AppointmentController@check')->name('appointment.check');
    Route::post('/appointment/update', 'AppointmentController@updateTime')->name('update');
    Route::get('patient-today', 'PrescriptionController@index')->name('patient.today');
    Route::post('prescription', 'PrescriptionController@store')->name('prescription');
    Route::get('/prescription/{userId}/{date}', 'PrescriptionController@show')->name('prescription.show');
    Route::get('/all-prescriptions', 'PrescriptionController@showAllPrescriptions')->name('all.prescriptions');
});
```

Figure 16 Routes

Views

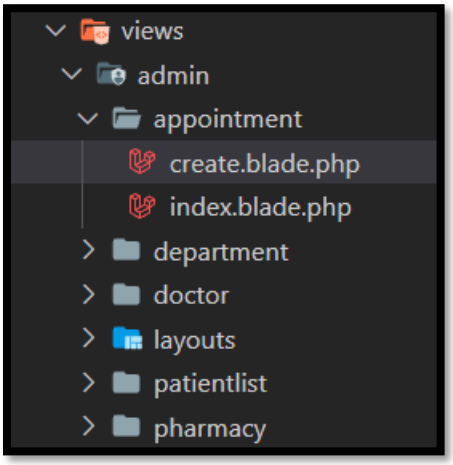
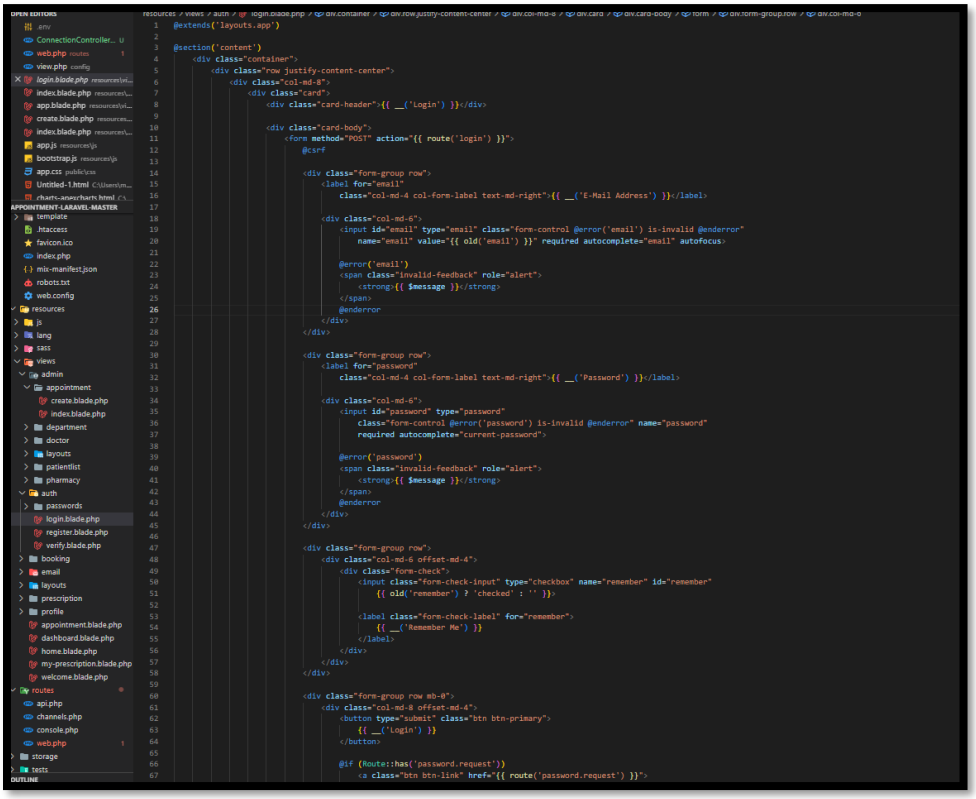


Figure 17 Views

Login Authentication Code



```
@extends('layouts.app')

@section('content')
    <div class="container">
        <div class="row justify-content-center">
            <div class="col-md-8">
                <div class="card">
                    <div class="card-header">{{ __('Login') }}</div>

                    <div class="card-body">
                        <form method="POST" action="{{ route('login') }}">
                            @csrf

                            <div class="form-group row">
                                <label for="email"
                                    class="col-md-4 col-form-label text-md-right">{{ __('E-Mail Address') }}</label>

                                <div class="col-md-6">
                                    <input id="email" type="email" class="form-control @error('email') is-invalid @enderror"
                                        name="email" value="{{ old('email') }}" required autocomplete="email" autofocus>

                                    @error('email')
                                    <span class="invalid-feedback" role="alert">
                                        <strong>{{ $message }}</strong>
                                    </span>
                                    @enderror
                                </div>
                            </div>

                            <div class="form-group row">
                                <label for="password"
                                    class="col-md-4 col-form-label text-md-right">{{ __('Password') }}</label>

                                <div class="col-md-6">
                                    <input id="password" type="password"
                                        class="form-control @error('password') is-invalid @enderror" name="password"
                                        required autocomplete="current-password">

                                    @error('password')
                                    <span class="invalid-feedback" role="alert">
                                        <strong>{{ $message }}</strong>
                                    </span>
                                    @enderror
                                </div>
                            </div>

                            <div class="form-group row">
                                <div class="col-md-6 offset-md-4">
                                    <div class="form-check">
                                        <input class="form-check-input" type="checkbox" name="remember" id="remember"
                                            {{ old('remember') ? 'checked' : '' }}>

                                        <label class="form-check-label" for="remember">
                                            {{ __('Remember Me') }}
                                        </label>
                                    </div>
                                </div>
                            </div>

                            <div class="form-group row mb-0">
                                <div class="col-md-8 offset-md-4">
                                    <button type="submit" class="btn btn-primary">
                                        {{ __('Login') }}
                                    </button>

                                    @if (Route::has('password.request'))
                                        <a class="btn btn-link" href="{{ route('password.request') }}">
```

Figure 18 Login Authentication Code

Login

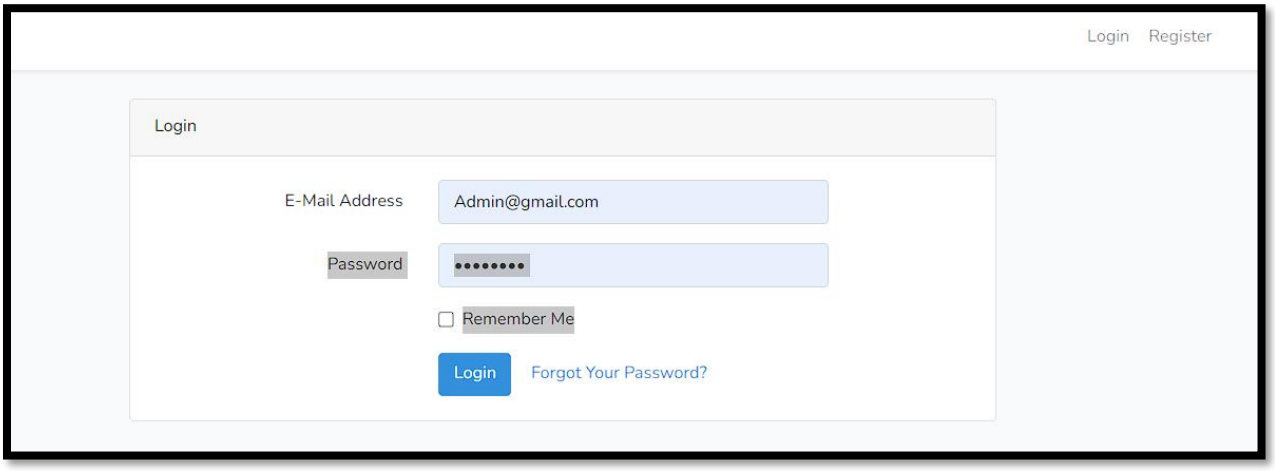


Figure 19 login page

The E-Healthcare - Online Consultation and Medical Subscription system login page allows users to access their dashboard and the system's features.

Register

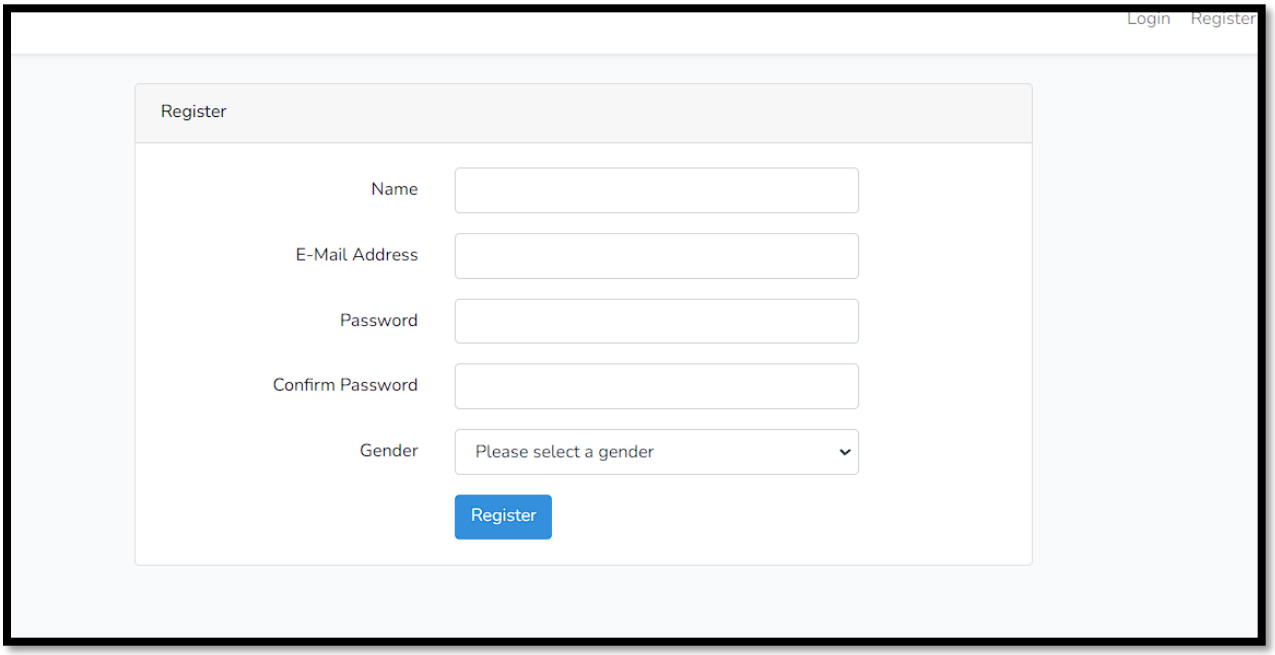


Figure 20 Registration page

The E-Healthcare - Online Consultation and Medical Subscription registration page is the first step for users to gain access to the system. It gathers vital information in order to develop a user profile and give customised services. It should be designed for simplicity and security.

Dashboard

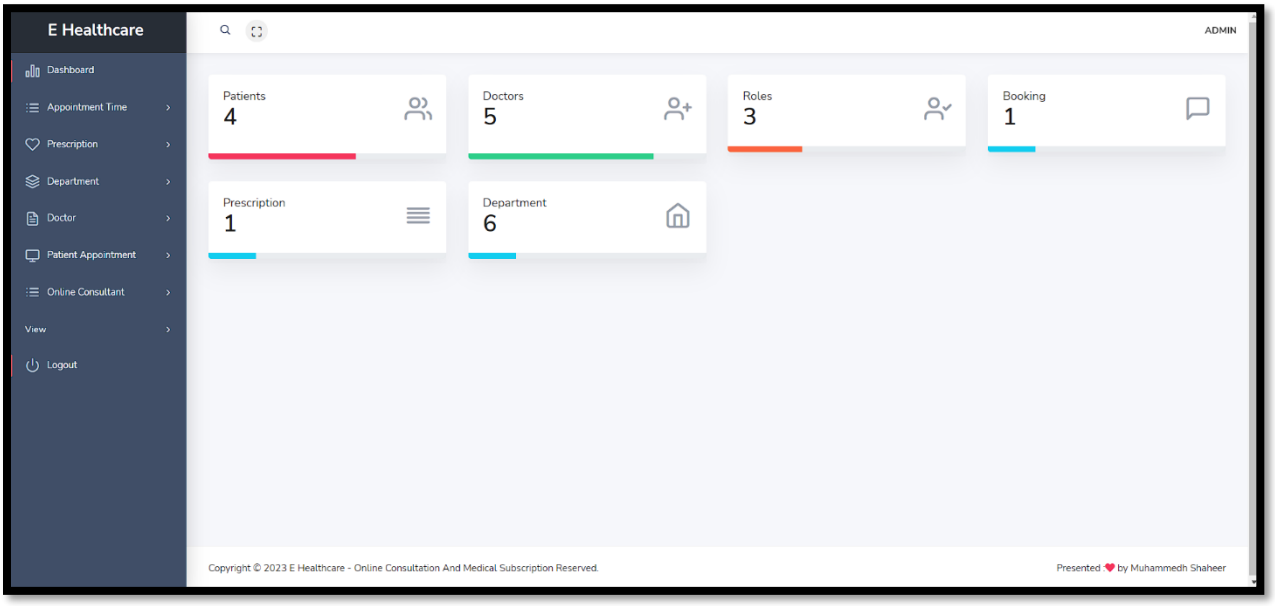


Figure 21 Dashboard

The E-Healthcare - Online Consultation and Medical Subscription system's dashboard serves as a central destination for users to access information and manage their healthcare needs. The dashboard displays the user's current health status, medical history, and current subscriptions. Users can also schedule appointments, examine test results, and contact with their healthcare providers. The dashboard is intended to be user-friendly and simple to use, allowing users to quickly and easily obtain the information and services they require. The dashboard's purpose is to create a centralized and convenient platform for health management and access to healthcare services.

Doctors Page

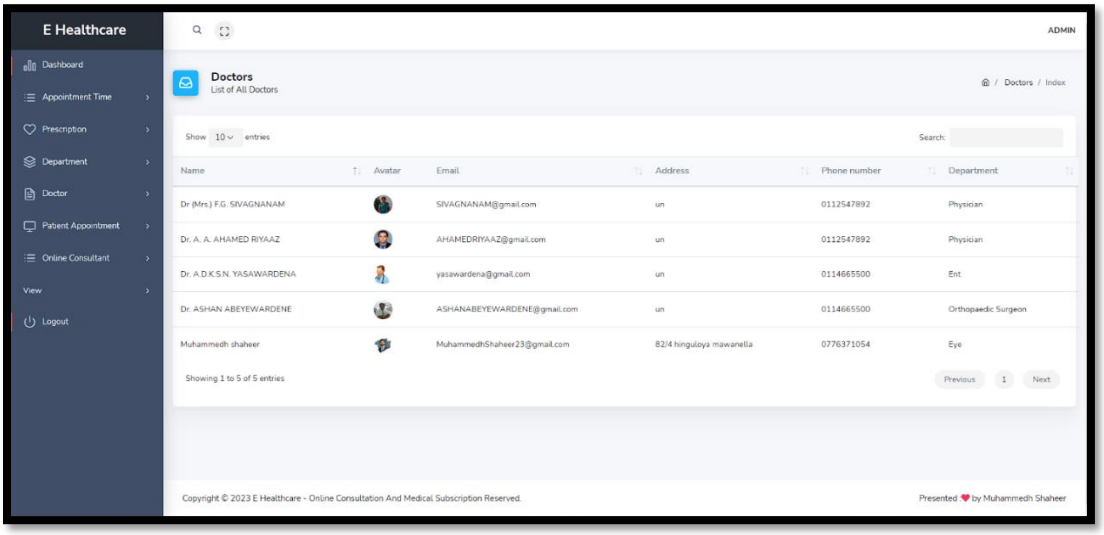


Figure 22 Doctors

The E-Healthcare - Online Consultation and Medical Subscription system's doctors page is a critical component of the whole platform. It gives customers access to information about healthcare providers available through the system, such as their qualifications, areas of specialty, and patient ratings. The doctors page also allows users to schedule appointments with their preferred providers, either for an online consultation or an in-person visit.

Department page

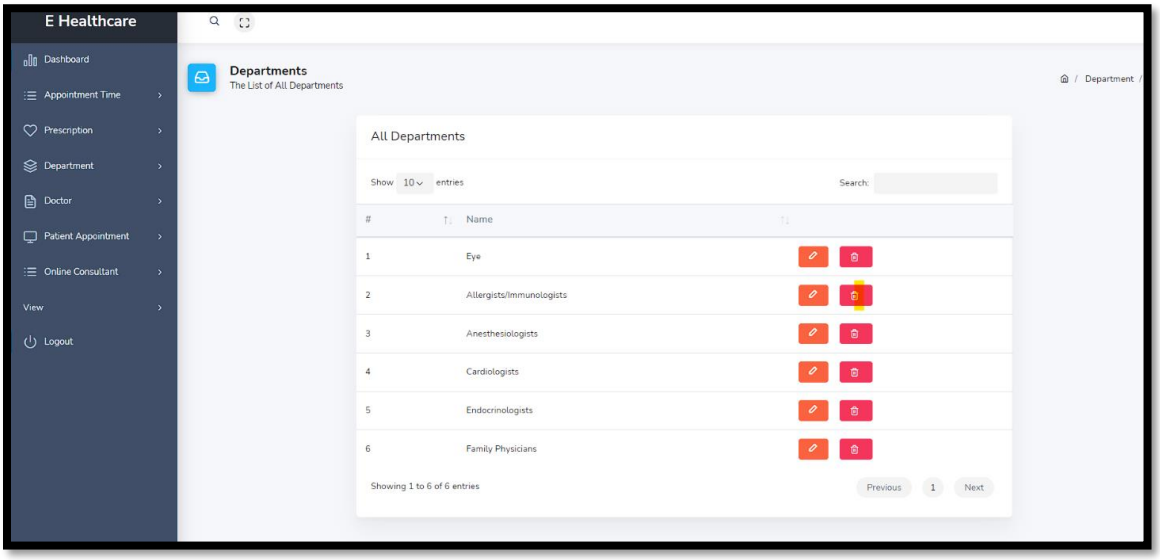


Figure 23 Departments

In the above figure it allows the user to choose the category of which the doctor is specialized

Appointments

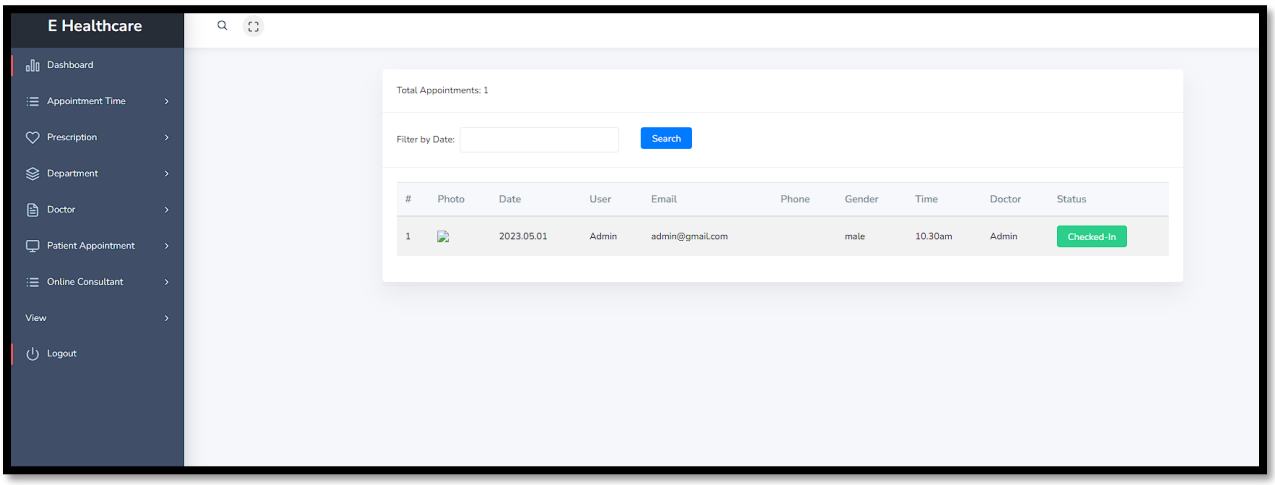


Figure 24 Appointments

Here the doctor will be able to view the appointments of the patients along with the patient details and previous reports

Patient login

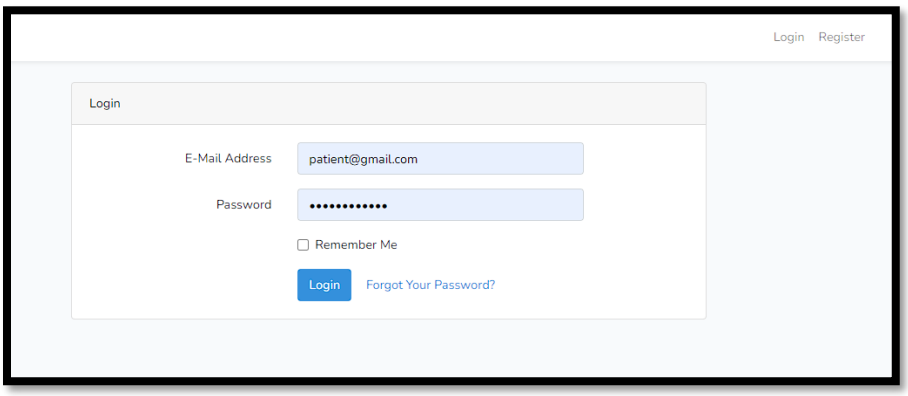


Figure 25 Patient login

here the patients will be able to login to the system

Patient Dashboard

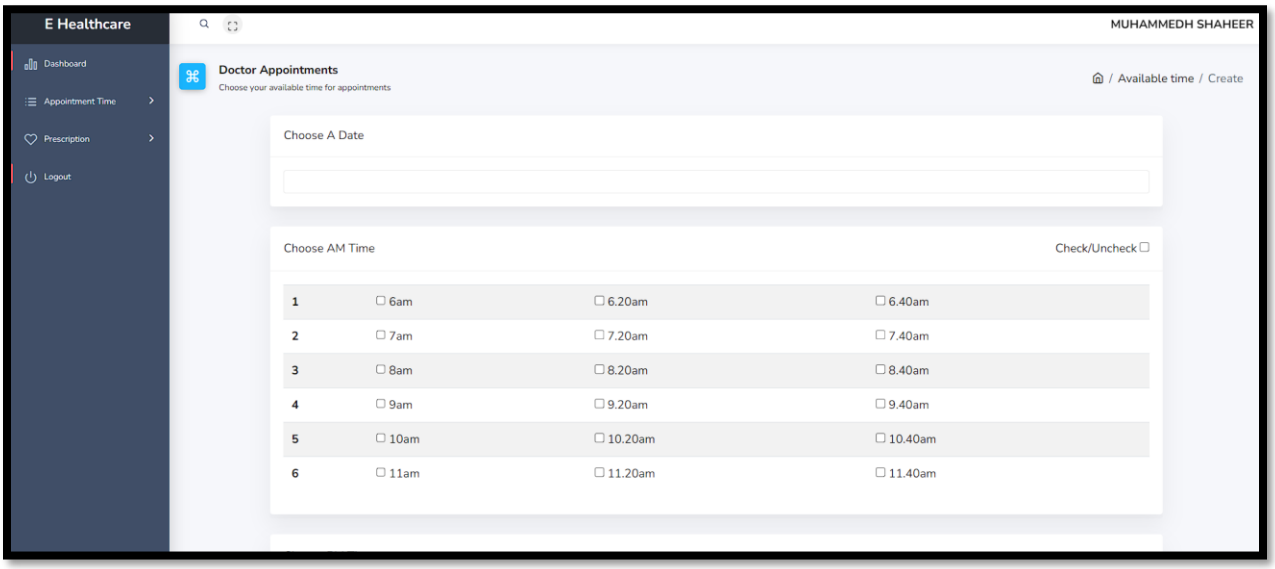


Figure 26 Patient Dashboard

the above is the patient dashboard where the patients can access to their needs

Online Consulting

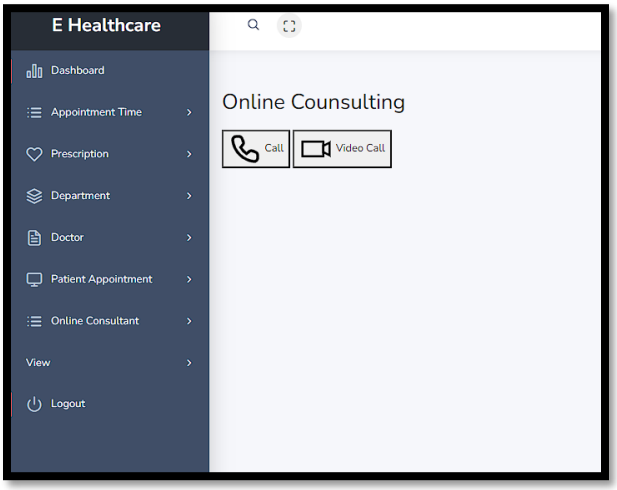


Figure 27Online Consulting

here the doctors and the patients will be able to book an appointment and consult online either by call or video call according to the patients reports and preferences

Prescription

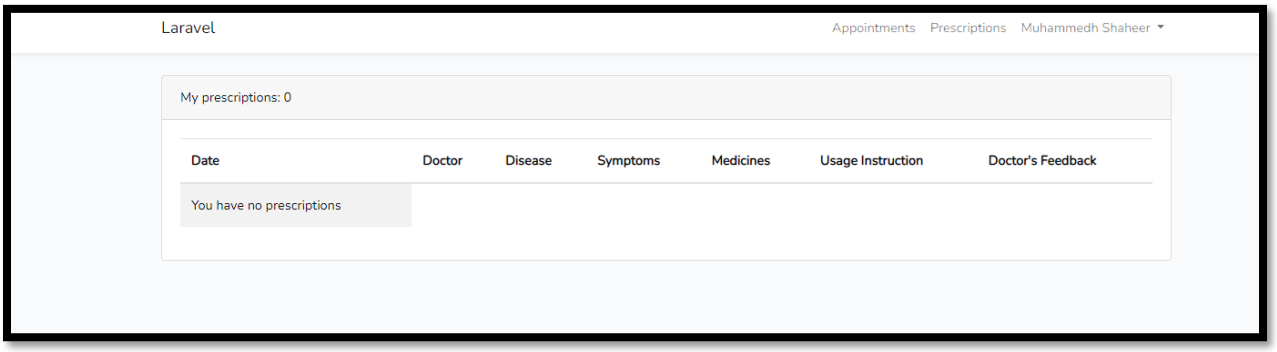


Figure 28 Prescription

Chapter 7

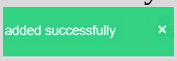
Testing and verification

Test Plan for E Healthcare – Online Consultation And Medical Subscription

- The platform must satisfy all functional requirements, have a user-friendly interface, and provide a secure environment for patient data.
- The scope of the testing will include all platform features and functionalities such as appointment scheduling, electronic health records, user account management, and data protection and security.
- The testing will take place in a controlled setting that properly resembles the live production environment.
- Manual and automated testing methods will be used in the testing process, which will comprise functional testing, integration testing, security testing, and performance testing.
- The testing schedule will be designed in accordance with the overall project schedule, with sufficient time provided for thorough testing and resolution of any concerns.

Test Cases for E Healthcare – Online Consultation And Medical Subscription

- Check that patients can schedule appointments online, that appointments are accurately shown on the calendar, and that patients receive appointment confirmations.
- Check that patients can access their medical records online, that data is securely stored and safeguarded, and that data can be updated as needed.
- Verify that patients can create and manage their own accounts, that passwords are securely saved, and that accounts may be canceled as needed.
- Data Privacy and Security: Ensure that patient data is secure and not accessible to unauthorized parties, that data is transmitted securely, and that the platform conforms with any data privacy rules.
- Performance: Check to see if the platform works as intended under varied load levels, if it is responsive and fast, and if it is stable.

Test case ID	Action	Inputs	Expected Output	Actual Output	Results
001	Enter correct Email and password hit login	Email ID : admin@gmail.com Password: 	Login success	Login success	Pass
002	Click register tab enter credentials and hit register	Enter first name Last name Email ID, password and confirm password 	User Register successful	Successfully registered	Pass
003	Admin add user by hit the add button	Enter the first name Last name Email ID Roles, status and actions	User added successfully 	User added successfully	Pass
004	Admin edit user by hit the add button	Edit the role and status	User updated successfully 	User updated successfully	Pass
006	Edit contact details by hit submit	Enter telephone, address, email address	Submitted successfully	Submitted successfully	Pass

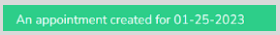
007	Doctor Appointments	Enter date and Time 	Appointment Add successfully 	Added successfully	Pass

Table 2

Chapter 8

Evaluation and Conclusion

The usage of Laravel to create an E-healthcare platform for online consultations and medical subscriptions offers several pros and disadvantages. One of this platform's primary assets is its user-friendly interface, which allows patients to easily schedule appointments and access their medical records. The site is also very user-friendly, allowing patients to get medical advice from the comfort of their own homes. Furthermore, the implementation of Laravel has aided in the security and protection of patient data from unauthorized access. One of the biggest disadvantages is the possibility of technological issues, such as downtime or software errors, disrupting access to the platform and inconveniencing patients. Furthermore, if patient data is not properly protected, there is a possibility of privacy violations, which could have catastrophic consequences. Furthermore, while the platform has reduced the appointment scheduling procedure, errors and miscommunication are still possible, especially if the platform is not properly maintained. Another thing to consider is the impact of E-healthcare on the overall medical business. While the platform has the potential to improve accessibility and efficiency in the healthcare system, it may also contribute to medical service decentralization. This could result in a more fragmented and disjointed healthcare system, especially in rural or underprivileged areas.

To conclusion, the development of E-healthcare utilizing Laravel has given several benefits to the medical business as well as some problems. The platform has increased accessibility and streamlined appointment scheduling, but there are worries about technical challenges, privacy violations, and the overall influence of E-healthcare on the healthcare system. To ensure that patients receive the best possible treatment, it will be critical to overcome these constraints and continue to develop the platform.

References

Breton, M. (2021, 09 26). *bmcprimcare*. Retrieved from bmcprimcare: https://bmcprimcare.biomedcentral.com/articles/10.1186/s12875-021-01543-4

Calleja, P. (2022, 5 18). *Managing your health in the age of Wi-Fi*. Retrieved from Managing your health in the age of Wi-Fi: https://www.mayoclinic.org/healthy-lifestyle/consumer-health/in-depth/telehealth/art-20044878

calleja, P. (2023, 1 2). *Rural and Remote Health*. Retrieved from Rural and Remote Health: https://www.rrh.org.au/journal/article/6467

direct, N. (n.d.). *ni direct*. Retrieved 11 29, 2022, from https://www.nidirect.gov.uk/articles/children-special-educational-needs#:~:text=A%20child%20has%20special%20educational,specialists%2C%20teachers%20and%20voluntary%20organisations.

Fuse. (2022). *Fuse*. Retrieved 11 28, 2022, from https://www.fuseuniversal.com/lms-guide/importance-of-lms#:~:text=An%20LMS%20helps%20create%20consistent,the%20ability%20to%20drive%20engagement.

Han, E.-R. (2020, 01 25). Medical education trends for future. *Medical education trends for future*. Retrieved from https://d-nb.info/1207728098/34

L, R. S. (2018, 07 31). pubmed.gov. *pubmed.gov*. Retrieved from pubmed.gov: https://pubmed.ncbi.nlm.nih.gov/30067214/

LC, O. (2021). ncbi. *ncbi*. Retrieved from https://pubmed.ncbi.nlm.nih.gov/?term=O%E2%80%99Dwyer+LC%5BAuthor%5D&filter=years.2019-2019

Mudheshvka, M. (2022). *Syndicode*. Retrieved 11 28, 2022, from https://syndicode.com/blog/how-to-build-a-learning-management-system/

N, M. (2022). NIH. *NIH*. Retrieved from https://pubmed.ncbi.nlm.nih.gov/?term=Munk%20N%5BAuthor%5D

Sandars, J. (2020, 10 02). *mededpublish*. Retrieved from mededpublish: https://mededpublish.org/articles/9-49

SM, B. (2022). pubmed.ncb. *pubmed.ncb*. Retrieved from https://pubmed.ncbi.nlm.nih.gov/?term=Badawy%20SM%5BAuthor%5D

Sullivan, E. E. (2021, 09 26). *BMC Primary Care*. Retrieved from BMC Primary Care: https://bmcprimcare.biomedcentral.com/articles/10.1186/s12875-021-01543-4

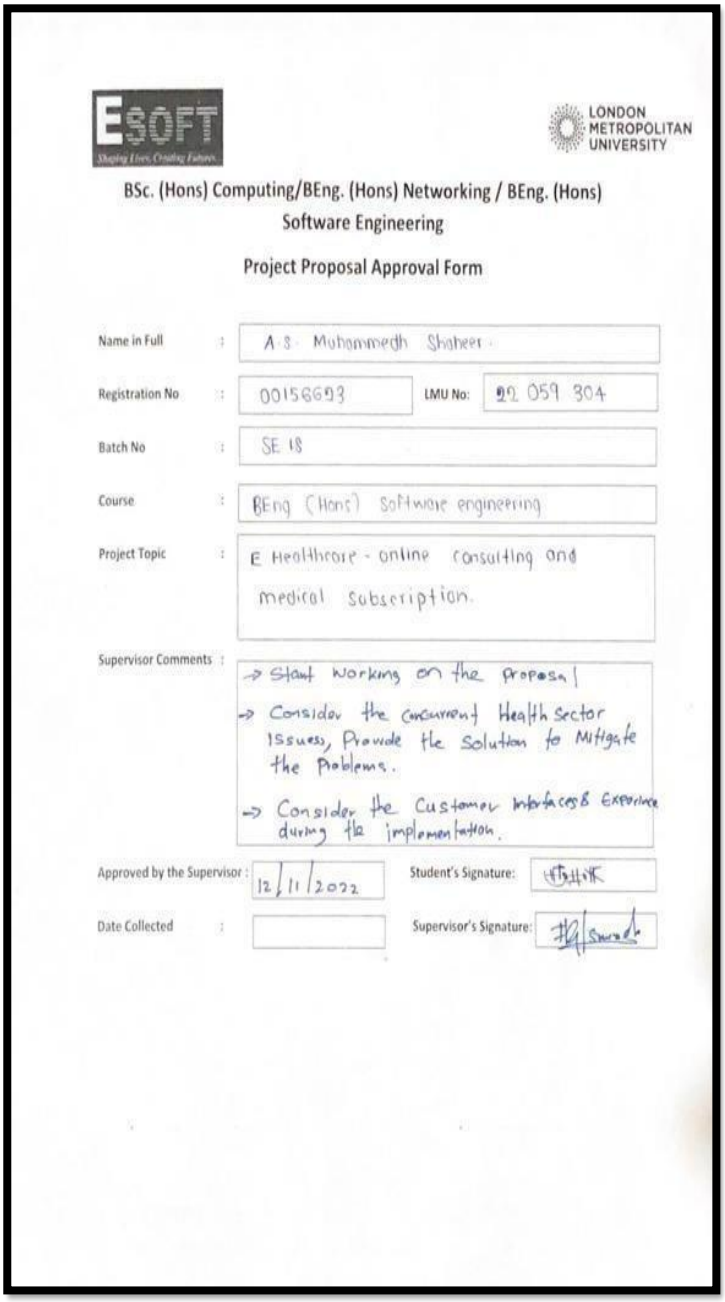
tutor. (2022). *Tutor doctor*. Retrieved 11 29, 2022, from https://www.tutordoctor.com/tutoring-services/special-tutoring-programs/special-needs-tutoring/

Vihan. (2020, 1 5). *nevon*. Retrieved from nevon: https://nevonprojects.com/e-healthcare-online-consultation-and-medical-subscriptin/

Wootton, R. (2020). Sage. *Sage*, 48. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3366107/

Appendices

Progress approval form and Project commencement meeting sheet.



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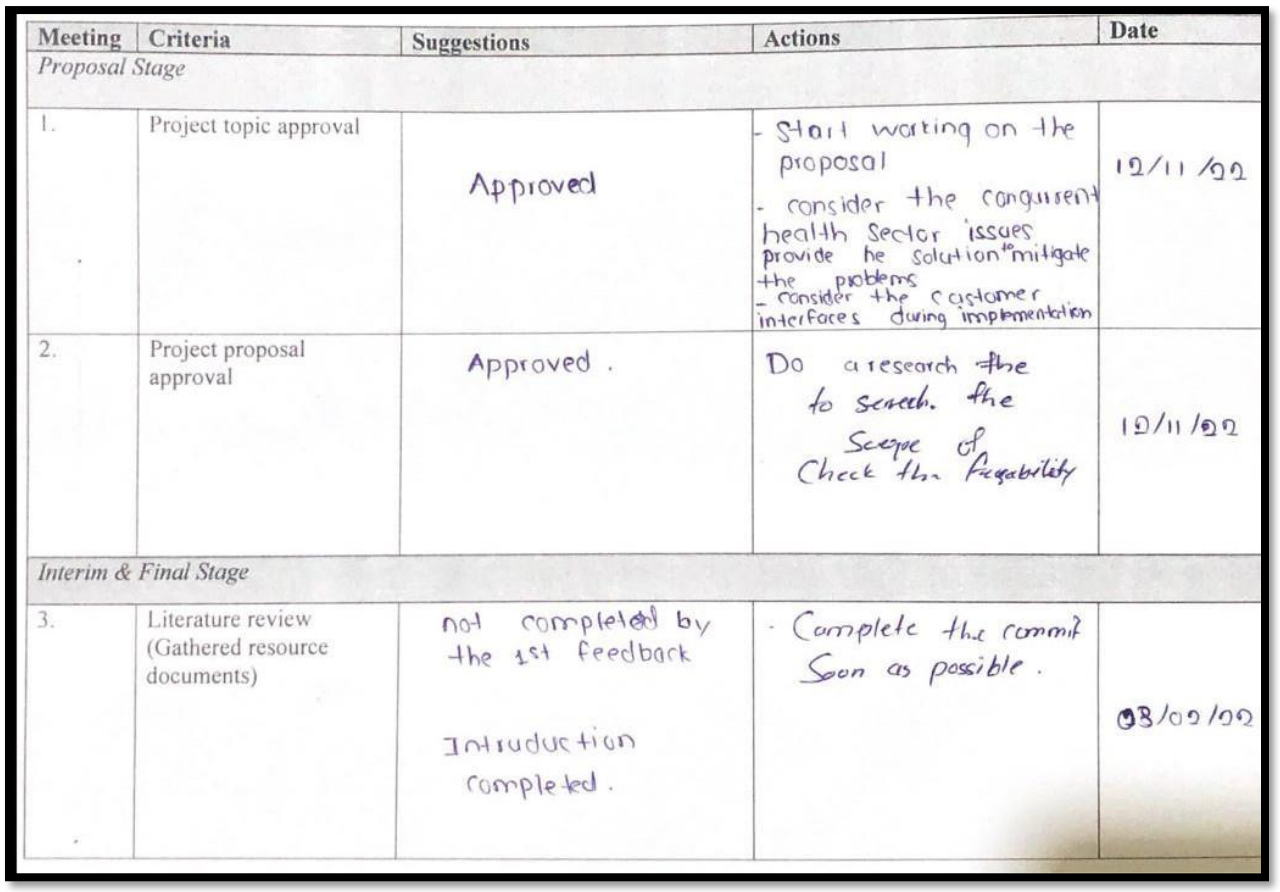
LONDON METROPOLITAN UNIVERSITY

BSc. (Hons) Computing/BEng. (Hons) Networking / BEng. (Hons) Software Engineering

Project Proposal Approval Form

Name in Full	:	A.S. Muhammedh Shaheer.	
Registration No	:	00156693	LMU No: 22 059 304
Batch No	:	SE 18	
Course	:	BEng (Hons) Software engineering	
Project Topic	:	E Healthcare - online consulting and medical subscription.	
Supervisor Comments	:	→ Start working on the proposal → Consider the concurrent Health sector issuess, Provide the solution to Mitigate the Problems. → Consider the Customer interfaces & Experience during the implementation.	
Approved by the Supervisor	:	12/11/2022	Student's Signature:
Date Collected	:		Supervisor's Signature:

Figure 29 Appendix



Meeting	Criteria	Suggestions	Actions	Date
Proposal Stage				
1.	Project topic approval	Approved	- Start working on the proposal - consider the congruent health Sector issues provide he solution to mitigate the problems - consider the customer interfaces during implementation	12/11/22
2.	Project proposal approval	Approved .	Do a research the to search. the Scope of Check the Feasability	12/11/22
Interim & Final Stage				
3.	Literature review (Gathered resource documents)	not completed by the 1st feedback Introduction completed .	· Complete the commit Soon as possible .	03/02/23

Figure 30