THE REVIVER
A WEB BASED APPLICATION FOR FINDING DOCTORS IN CRITICAL SITUATIONS.

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A WEB BASED APPLICATION FOR FINDING DOCTORS IN CRITICAL SITUATIONS

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Abstract

Access to healthcare services is one of the most significant challenges faced by individuals in the modern era. The cost, time, and effort required to visit a hospital or clinic often deter individuals from seeking medical attention. Furthermore, the ongoing COVID-19 pandemic has highlighted the need for telemedicine and remote healthcare solutions. The Reviver project aims to solve this problem by providing a convenient and cost-effective online platform for individuals to find and consult with doctors.

The current healthcare system has many limitations, including limited access, long waiting times, and high costs. The Reviver project addresses these challenges by providing a comprehensive solution that leverages the power of technology. The platform allows users to search for doctors based on their specialty, location, availability, and ratings. This helps users to find the most suitable doctor based on their needs and preferences.

The Reviver platform is designed to be user-friendly and accessible to all. Patients can easily access the platform from their mobile phones or laptops and can schedule appointments with doctors using the platform's intuitive interface. The platform ensures patient privacy and security, as all consultations are conducted through a secure platform.

The Reviver project is developed using Django, a high-level Python web framework. The platform provides a scalable and robust architecture that can handle a large number of users and provide high-quality services.

The proposed solution offers significant benefits for both patients and doctors. Patients can save time and money by avoiding hospital or clinic visits, while doctors can earn extra income by providing online consultations. The platform improves accessibility to healthcare services, particularly for individuals living in remote areas or unable to visit a hospital. Additionally, the platform ensures

patient privacy and security, as all consultations are conducted through a secure platform.

The Reviver project is expected to have a positive impact on society by improving access to healthcare services. The platform provides a unique solution to the challenges faced by individuals seeking healthcare services and is expected to improve the quality of life for many individuals. The platform can also help reduce the burden on hospitals and clinics, particularly during the ongoing pandemic.

In conclusion, The Reviver project is a comprehensive and innovative solution to the challenges faced by individuals seeking healthcare services. The platform has the potential to transform the healthcare industry by improving access and affordability while maintaining high-quality services.

Preface

I am pleased to present the Reviver project, a comprehensive and innovative solution to the challenges faced by individuals seeking healthcare services. I developed this project while pursuing my Bachelor of Science degree in Computer Science and Engineering at the University of Barishal. The aim of this project is to provide a convenient and cost-effective online platform for individuals to find and consult with doctors.

The idea for the Reviver project was inspired by the challenges faced by individuals seeking healthcare services in the modern era. The cost, time, and effort required to visit a hospital or clinic often deter individuals from seeking medical attention, and the ongoing COVID-19 pandemic has further highlighted the need for telemedicine and remote healthcare solutions. The Reviver project was developed to address these challenges by providing a user-friendly platform that offers a range of healthcare services, including physician consultation, advice on diet control, and personal assistance.

The project was developed using Django. The Reviver project offers significant benefits for both patients and doctors, including improved accessibility to healthcare services, cost savings, and extra income for doctors.

I would like to express my gratitude to my supervisor Md. Samsuddoha, who provided valuable guidance and support throughout the development of this project. I would also like to thank my classmates and seniors who provided feedback and suggestions that helped improve the project.

I hope that the Reviver project will be useful to individuals seeking healthcare services and will contribute to improving access to healthcare services in the modern era.

Saurov Chandra Biswas

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Introduction

1.1 The Problem Statement

Access to healthcare services is a significant challenge faced by individuals in the modern era. The cost, time, and effort required to visit a hospital or clinic often deter individuals from seeking medical attention. This problem is further exacerbated by the ongoing COVID-19 pandemic, which has highlighted the need for telemedicine and remote healthcare solutions. As a result, there is a pressing need for a convenient and cost-effective online platform that enables individuals to easily find and consult with doctors.

The existing solutions in the market have some limitations that make them less effective. For example, many online healthcare platforms only offer a limited range of services, such as virtual consultations or prescription refills. They may not provide access to specialists or other healthcare professionals, and they may not be able to offer personalized advice on diet control or other lifestyle modifications. Additionally, many of these platforms may not be user-friendly, which can make it difficult for patients to navigate and access the services they need.

To address these challenges, we propose the Reviver project, which is a comprehensive and innovative solution to the problems faced by individuals seeking healthcare services. The platform is designed to be a one-stop-shop for all healthcare needs, providing access to a wide range of healthcare professionals, including specialists and dietitians. The platform also enables patients to receive personalized advice on diet control and other lifestyle modifications.

One of the key features of the Reviver platform is its user-friendly interface, which makes it easy for patients to navigate and access the services they need. Patients can search for doctors based on their specialty, location, availability, and

ratings. They can also see doctors' service status, whether they are currently available or busy, and schedule appointments with them using Zoom API. Furthermore, patients can receive advice on diet control and personal assistance from doctors through the platform, making it a comprehensive solution for individuals seeking healthcare services.

The Reviver project is developed using Django, a high-level Python web framework. The platform's robust and scalable architecture ensures that it can handle a large number of users and provide high-quality services. The proposed solution offers significant benefits for both patients and doctors. Patients can save time and money by avoiding hospital or clinic visits, while doctors can earn extra income by providing online consultations. Additionally, the platform improves accessibility to healthcare services, particularly for individuals living in remote areas or unable to visit a hospital.

In conclusion, the Reviver project is a comprehensive and innovative solution to the challenges faced by individuals seeking healthcare services. The platform provides a unique solution to the limitations of existing online healthcare platforms and is expected to improve the quality of life for many individuals. The platform can also help reduce the burden on hospitals and clinics, particularly during the ongoing pandemic.

1.2 Related Solutions

1.2.1 Doctime.com

Description

DocTime is a Bangladeshi organization that offers online medical consultation services to individuals. It was established to provide a convenient, secure, and cost-effective way for patients to connect with doctors and receive medical advice

from the comfort of their own homes. The organization is committed to ensuring that everyone has access to quality healthcare regardless of their location, financial status, or medical condition. DocTime has a team of experienced and qualified doctors who are available 24/7 to answer patients' questions and provide medical guidance.

Services

DocTime offers a wide range of services to meet the healthcare needs of patients. These include online consultations with doctors, scheduling appointments, accessing medical records, and receiving prescriptions. Patients can search for doctors based on their specialty, location, availability, and ratings. They can also check doctors' credentials and read reviews from other patients to make informed decisions about their healthcare. DocTime's platform is user-friendly and accessible from any device, including smartphones, tablets, and computers. The organization uses state-of-the-art technology to ensure that patient information is kept confidential and secure. Overall, DocTime's services are designed to provide patients with quick, convenient, and reliable access to medical care.

Business Model

The business model of DocTime Bd is based on commission-based revenue. The platform allows doctors to register on their website and create their profiles. Once registered, doctors can set their availability and fees for online consultations. Patients can then search for doctors based on their specialty, availability, ratings, and fees, and book appointments for online consultations.

When a patient schedules an appointment with a doctor, DocTime Bd takes a commission on the doctor's fee for the consultation. The commission rate varies depending on the services provided by the platform. The platform also offers additional services to doctors, such as digital prescription writing and patient

management tools, which generate additional revenue.

Moreover, DocTime Bd also earns revenue by selling advertising space on its platform. Pharmaceutical companies and healthcare service providers can advertise their products and services to the platform's users. The company also earns revenue through partnerships with healthcare service providers. For example, the platform has partnered with diagnostic centers to offer discounted lab tests to its users.

Overall, DocTime Bd's business model is based on creating a marketplace that connects patients with doctors for online consultations while generating revenue through commissions, advertising, and partnerships.

1.2.2 Doctorola.com

Description

Doctorola is an online healthcare platform based in Bangladesh that provides patients with convenient and affordable healthcare services. Founded in 2017, the platform aims to bridge the gap between patients and doctors by providing a virtual platform where patients can access quality healthcare services from the comfort of their homes. Doctorola's mission is to make healthcare services accessible and affordable for everyone, regardless of their location or financial status. The platform is equipped with cutting-edge technology, and patients can access healthcare services from qualified and experienced doctors from different specialties.

Services

Doctorola offers a wide range of healthcare services to patients, including virtual doctor consultations, online prescriptions, and diagnostic tests. Patients can use the platform to schedule appointments with doctors and have virtual consultations

through video conferencing. Doctorola also offers online prescriptions, where doctors can prescribe medication to patients through the platform, and patients can have the medication delivered to their doorstep. The platform also offers diagnostic tests, and patients can book appointments for laboratory tests through the platform. Doctorola's services are available 24/7, and patients can access them from anywhere with an internet connection. The platform also maintains a comprehensive database of patient health records, which patients can access anytime they need them.

Business Model

Doctorola, an online healthcare platform in Bangladesh, operates under a commission-based business model. The platform connects patients with doctors and healthcare providers and charges a commission for every successful transaction. Doctorola charges a commission of 10% for online consultations and 5% for in-person appointments.

In addition, Doctorola also offers premium services such as appointment booking with specialist doctors, home visit by a doctor, and diagnostic tests. The premium services have fixed charges, and Doctorola charges a commission on top of the premium charges. Doctorola generates revenue through these commission-based and premium services, enabling the platform to provide a hassle-free healthcare experience to patients in Bangladesh.

1.2.3 Tonic

Description

Tonic is a healthcare technology startup that provides a range of digital health services to patients across Bangladesh. Founded in 2018, Tonic aims to bridge the gap between patients and healthcare providers by offering convenient and afford-

able access to medical services through its online platform. Tonic's mission is to improve the overall health and wellbeing of the Bangladeshi population by making healthcare more accessible and efficient.

Services

Tonic offers a variety of services to its users, including telemedicine consultations, online pharmacy services, and home sample collection for diagnostic tests. Patients can book appointments with qualified doctors through Tonic's platform, which allows them to consult with physicians from the comfort of their homes. The platform also features an online pharmacy where patients can order medicines and have them delivered to their doorstep. Tonic's home sample collection service allows patients to have their diagnostic tests done without having to travel to a laboratory.

Business Model

Tonic's business model is centered around providing affordable healthcare services to patients across Bangladesh. By leveraging technology, Tonic is able to reduce the cost of healthcare and make it more accessible to the general population. In addition, Tonic's platform is designed to streamline the healthcare process, reducing wait times and improving patient outcomes. By offering a range of digital health services, Tonic is well-positioned to become a leading player in the Bangladeshi healthcare market.

1.2.4 Maya Apa

Description

Maya Apa is a Bangladeshi digital healthcare platform that provides a range of health-related services to its users. It was founded in 2011 by Ivy Huq Russell

and is based in Dhaka, Bangladesh. The platform connects users with medical professionals, providing them with access to reliable health information and advice. Maya Apa is focused on improving the health and wellbeing of women, and it has become a valuable resource for women in Bangladesh who face significant challenges in accessing healthcare services.

Services

Maya Apa offers a range of services to its users, including online consultations with medical professionals, access to health information and advice, and a directory of healthcare providers. Users can submit questions about their health and receive answers from medical professionals within 24 hours. The platform also provides information on a range of health topics, including women's health, pregnancy, and mental health. Maya Apa has a team of medical professionals who are available to provide advice and support to users, and the platform is designed to be user-friendly and accessible to people from all backgrounds.

Business Model

Maya Apa provides a valuable service to women in Bangladesh, who often face significant challenges in accessing healthcare services. The platform has helped to bridge the gap between patients and medical professionals, providing users with access to reliable health information and advice. By using digital technology to connect users with medical professionals, Maya Apa has been able to provide a cost-effective and accessible healthcare solution. The platform has also created new business opportunities for medical professionals, who are able to offer their services through the platform. Overall, Maya Apa has the potential to transform the healthcare landscape in Bangladesh, providing a much-needed service to women and improving the health and wellbeing of the population.

1.2.5 Praava Health

Description

Praava Health is a healthcare organization in Bangladesh that aims to provide comprehensive healthcare services to individuals and families. Founded in 2017, Praava Health aims to be a patient-centric healthcare provider that leverages technology and clinical excellence to provide quality healthcare to its patients. Praava Health operates clinics in several locations in Dhaka and offers a range of healthcare services, including primary care, specialty care, diagnostics, and telemedicine.

Services

Praava Health provides a range of services to its patients. Its primary care services include routine check-ups, vaccinations, and screenings. It also offers specialized care in areas such as cardiology, gynecology, dermatology, pediatrics, and mental health. Praava Health's diagnostic services include imaging, laboratory testing, and genetic testing. Additionally, Praava Health has a telemedicine platform that allows patients to consult with its doctors remotely, making healthcare more accessible to those who are unable to physically visit its clinics.

Business Model

Praava Health's business model is based on providing high-quality healthcare services to its patients. It aims to differentiate itself from other healthcare providers in Bangladesh by focusing on patient-centric care, leveraging technology, and employing clinical best practices. Praava Health's business value lies in its ability to provide accessible, affordable, and quality healthcare to individuals and families in Bangladesh. As a healthcare provider, Praava Health aims to improve the overall health outcomes of its patients, which can have positive impacts on the country's economy and society as a whole. Additionally, Praava Health's use of technology

and data analytics can help to improve the efficiency of healthcare delivery in Bangladesh, which is a critical need in a country where healthcare resources are limited.

1.2.6 CMED Health

Description

CMED Health is a digital healthcare platform that provides telemedicine services to the people of Bangladesh. The platform aims to revolutionize the traditional healthcare system of the country by providing access to quality healthcare services remotely. The company was founded in 2018 by Dr. Mohammad Shahidullah and has since then been providing affordable healthcare services to patients across the country.

Services

CMED Health offers a range of healthcare services through its platform, including online doctor consultation, prescription, lab test booking, and home medicine delivery. Patients can easily register and create their profile on the platform and schedule appointments with doctors according to their convenience. The platform also offers services like digital prescriptions, where patients can receive prescriptions online and order medicines from the comfort of their homes. Additionally, CMED Health has partnered with leading diagnostic centers and provides lab test booking services through its platform.

Business Model

CMED Health has disrupted the traditional healthcare system in Bangladesh by providing affordable and accessible healthcare services through its digital platform. The company's business model revolves around a commission-based rev-

enue system, where it charges a commission fee for every successful transaction made through its platform. This has helped CMED Health generate a significant revenue stream while providing affordable healthcare services to the people of Bangladesh. The company has also partnered with several healthcare providers and diagnostic centers, enabling them to reach a wider audience and expand their business. Overall, CMED Health has the potential to revolutionize the healthcare sector in Bangladesh and improve the accessibility and affordability of healthcare services for all.

1.2.7 Healthtap

Description

HealthTap is a virtual health company that provides users with online access to medical advice, information, and support. It is a US-based company that was founded in 2010 by Ron Gutman, a technology entrepreneur. HealthTap's mission is to improve the accessibility and quality of healthcare for everyone, regardless of their location, income, or insurance coverage. It does this by leveraging the power of technology and the expertise of thousands of doctors and medical professionals from around the world.

Services

HealthTap provides a wide range of virtual health services to users, including access to licensed doctors, medical advice, second opinions, health education, and personalized health recommendations. Users can access these services via the HealthTap website or mobile app, which are available 24/7. HealthTap's AI-powered platform uses machine learning algorithms to match users with the most appropriate doctors and medical professionals based on their specific health needs and preferences. Users can also connect with doctors via video chat or text mes-

saging, and they can share medical records and images securely.

Business Model

HealthTap's business model is based on a freemium model, which means that users can access basic health information and services for free, but they have to pay for more advanced services such as virtual consultations with doctors. HealthTap generates revenue through subscription fees paid by users and by selling data and insights to healthcare providers, insurers, and other stakeholders in the healthcare industry. The company has raised over $85 million in funding from investors such as Khosla Ventures, Mayfield Fund, and Eric Schmidt. HealthTap's virtual health platform has the potential to revolutionize the healthcare industry by providing more accessible, affordable, and personalized healthcare services to people around the world.

1.2.8 Teladoc Health

Description

Teladoc Health is a leading virtual healthcare provider that connects patients with licensed doctors through digital platforms. The company was founded in 2002 and has since grown to become a major player in the telehealth industry. Teladoc Health offers a variety of services, including virtual doctor visits, mental health counseling, dermatology consultations, and nutritional coaching. The platform is accessible to patients around the clock, making it a convenient option for those who need healthcare services outside of regular business hours.

Services

The services provided by Teladoc Health are designed to make healthcare more accessible and convenient for patients. With virtual doctor visits, patients can

consult with licensed physicians from the comfort of their own homes, eliminating the need to travel to a physical clinic or hospital. Mental health counseling is also available through the platform, with licensed therapists providing support for a variety of issues, including anxiety, depression, and relationship problems. Teladoc Health also offers dermatology consultations, enabling patients to receive advice on skin conditions from board-certified dermatologists. Nutritional coaching is another service provided by Teladoc Health, offering patients personalized guidance on how to improve their eating habits and overall health.

Business Model

The business value of Teladoc Health is significant, as it offers a cost-effective and convenient alternative to traditional healthcare services. By providing virtual consultations, Teladoc Health can reduce healthcare costs for patients and insurance providers alike. Additionally, the platform enables doctors to see more patients in a shorter amount of time, increasing their productivity and revenue. Teladoc Health has also demonstrated its value during the COVID-19 pandemic, providing a safe way for patients to receive healthcare services without risking exposure to the virus. As virtual healthcare continues to gain popularity, Teladoc Health is poised for continued growth and success in the telehealth industry.

1.2.9 Practo

Description

Practo is a healthcare technology company headquartered in Bangalore, India. It was founded in 2008 by Shashank ND and Abhinav Lal. The company aims to simplify healthcare by making it more accessible, affordable, and convenient for everyone. Practo provides a digital platform for patients to find doctors, book appointments, access medical records, and consult with healthcare professionals.

Services

Practo offers a range of services to patients and healthcare providers. Patients can use the Practo app or website to search for doctors by specialty, location, and availability. They can also book appointments, receive reminders, and access their medical records on the platform. Additionally, patients can consult with doctors online through the Practo app or website. Practo also offers a suite of software tools to healthcare providers, including electronic health records, practice management software, and telemedicine solutions.

Business Model

Practo's mission is to simplify healthcare and make it more accessible to everyone. By leveraging technology, the company has created a platform that connects patients with healthcare providers in a convenient and affordable way. This has helped to bridge the gap between patients and doctors, particularly in underserved areas where access to healthcare is limited. Practo's software tools for healthcare providers also help to streamline medical practices, reduce costs, and improve patient outcomes. The company's business model is based on a combination of subscription fees, commissions on bookings, and revenue from software sales, which has helped to fuel its growth and expansion into new markets.

1.2.10 Zocdoc

Description Zocdoc is a digital healthcare platform that connects patients with doctors and other healthcare providers. The platform allows patients to search for and book appointments with providers, read reviews from other patients, and receive reminders about upcoming appointments. Zocdoc was founded in 2007 and is based in New York City.

Services Zocdoc provides several services for patients and healthcare providers. For patients, the platform allows them to search for doctors by specialty, location, insurance, and availability. Patients can book appointments online and receive reminders via email, text message, or push notification. They can also read reviews from other patients to help them make an informed decision about which provider to choose. For healthcare providers, Zocdoc offers a suite of tools to help them manage their schedules, communicate with patients, and improve their online presence. Providers can also access analytics to help them track their performance and improve patient outcomes.

Business Model Zocdoc generates revenue by charging healthcare providers a monthly subscription fee for access to its platform. Providers can choose from several subscription plans based on their needs and the size of their practice. Zocdoc also offers advertising services to providers who want to promote their services to a wider audience. In addition, the platform charges a fee for each new patient appointment booked through its platform. Zocdoc's business model has been successful, with the company raising over $375 million in funding since its founding.

1.2.11 Amwell

Description Amwell is a telemedicine platform that provides virtual healthcare services to patients across the United States. The platform allows patients to connect with healthcare providers in real-time using their smartphones, tablets, or computers. Amwell was founded in 2006 and is based in Boston, Massachusetts.

Services Amwell provides several virtual healthcare services for patients, including video visits, phone consultations, and secure messaging with healthcare providers. Patients can use the platform to connect with healthcare providers for a range of medical issues, including urgent care, mental health, dermatology, and

chronic disease management. Amwell's platform is available 24/7, and patients can access care from the comfort of their own homes.

Business Model Amwell generates revenue by charging patients and healthcare providers for its virtual healthcare services. Patients can choose from several pricing options based on their needs and the type of visit they require. Healthcare providers pay a fee to use Amwell's platform and receive a share of the revenue generated from patient visits. Amwell also partners with health plans and employers to offer virtual healthcare services to their members and employees. The company has been successful, with its stock price rising significantly since its initial public offering in 2020.

1.2.12 eClinic

Description eClinic is a virtual healthcare platform that provides telemedicine services to patients across India. The platform allows patients to connect with healthcare providers in real-time using their smartphones, tablets, or computers. eClinic was founded in 2015 and is based in Hyderabad, India.

Services eClinic provides several virtual healthcare services for patients, including video visits, phone consultations, and secure messaging with healthcare providers. Patients can use the platform to connect with healthcare providers for a range of medical issues, including general health concerns, chronic disease management, and mental health. eClinic's platform is available 24/7, and patients can access care from anywhere in India.

Business Model eClinic generates revenue by charging patients a fee for its telemedicine services. The platform offers different subscription plans for individuals, families, and corporates. The pricing varies depending on the number of consultations, the type of services required, and the subscription period. In addition, eClinic also generates revenue by partnering with hospitals, clinics, and

other healthcare providers to offer its telemedicine services to their patients. This allows eClinic to expand its reach and tap into new markets. The platform also offers a referral program where users can refer their friends and family to use the service and earn credits. Overall, eClinic's business model is centered around providing affordable and accessible healthcare services through its telemedicine platform while generating revenue through subscription plans, partnerships, and referral programs.

1.3 Proposed Solution

The proposed solution is to develop a website that will serve as a platform for patients to find doctors and consult with them online. The website will feature a scheduling system that allows doctors to set their active time and free time, and patients can schedule appointments using the Zoom API. This will enable patients to easily find doctors and make informed decisions based on the doctors' ratings and service status. Additionally, patients can send consult requests to doctors and receive responses accordingly. The website will provide an efficient solution to the lack of information about available doctors, and it will help reduce delays in receiving medical care.

The website will also be beneficial to doctors, as it will provide them with an additional source of income by offering their services online. They can offer consultations on topics such as diet control and personal assistance, which will help patients maintain good health. The website will also save time and money for patients, as they can consult with doctors from the comfort of their homes. Thus, the website will serve as a comprehensive platform that solves multiple problems for patients seeking medical assistance.

The proposed website can be developed using Django, a popular Python-based web framework. Django offers a wide range of features and tools that can be uti-

lized to develop a robust and scalable web application. It provides a built-in admin interface for managing doctors and patients, and it offers various authentication and authorization mechanisms to ensure data privacy and security.

The website can also utilize various Django packages to enhance its functionality. For example, django-auth can be used to integrate social authentication with platforms like Facebook and Google, making it easier for patients to sign up and log in. Django-crispy-forms can be used to create customized and user-friendly forms, and django-payments can be used to implement payment processing for doctors' services.

In addition, Django offers excellent support for integrating with third-party APIs like the Zoom API, which can be used to schedule appointments between doctors and patients. This will provide a seamless and user-friendly experience for both doctors and patients, as they can easily schedule and join appointments from within the website.

Overall, using Django for the development of the proposed website will enable the creation of a robust, secure, and user-friendly platform that addresses the challenges faced by patients seeking medical attention.

1.4 Objective of the Project

The main objective of the project is to develop a website that provides a platform for patients to find doctors and consult with them online. The website will feature a scheduling system that allows doctors to set their active time and free time, and patients can schedule appointments using the Zoom API. This will help patients make informed decisions about which doctors to consult based on their ratings and service status. Additionally, the website aims to help reduce delays in receiving medical care by providing a comprehensive platform that solves multiple problems for patients seeking medical assistance.

Another objective of the project is to provide an additional source of income for doctors by offering their services online. The website will enable doctors to offer consultations on topics such as diet control and personal assistance, which will help patients maintain good health. The website will also save time and money for patients, as they can consult with doctors from the comfort of their homes. Thus, the project aims to provide a win-win solution for both doctors and patients by creating an efficient platform that benefits both parties.

To achieve these objectives, the project will be developed using the Django web framework, which provides a powerful and flexible development environment for building web applications. The website will also leverage the Zoom API to enable seamless online consultations between doctors and patients. Overall, the project aims to address the challenges of finding available doctors and receiving timely medical care, while providing an additional source of income for doctors and improving the overall health outcomes for patients.

1.5 Motivation

The motivation behind this project is the need for a comprehensive solution to the challenges faced by patients seeking medical attention, especially in the current scenario where visiting hospitals and clinics can pose a risk due to the COVID-19 pandemic. The lack of information about available doctors and their services often leads to delays in receiving medical care. Moreover, people residing in rural areas or those who cannot travel due to disabilities or other reasons find it challenging to access medical care. The proposed solution, a website that offers online consultations with doctors, aims to provide a platform where patients can easily find doctors, schedule appointments, and receive medical advice from the comfort of their homes. The website will also benefit doctors by providing them with an additional source of income and expanding their reach beyond traditional

clinics and hospitals. This project is motivated by the need to provide an efficient and accessible solution to the healthcare needs of people, especially during these trying times.

1.6 System Overview

1.6.1 Patient Interaction

- Login/Registration: A patient can create an account on The Reviver system to access its features, such as searching for doctors and sending consultation requests. The patient can log in to their account using their credentials.
- View Active Doctors: The Reviver system displays a list of active doctors on its homepage. The patient can view this list without logging in to the system. The list includes the doctors' names, specialties, and ratings.
- Search for a Doctor: If the patient wants to search for a specific doctor, they can use the search feature on the website. The search can be done based on the doctor's name, specialty, or location.
- Send Consultation Request: Once the patient has found a suitable doctor, they can send a consultation request to the doctor through The Reviver system. The patient can choose the date and time of the appointment and provide any relevant information about their medical condition.

1.6.2 Doctor Interaction

- Login/Registration: Doctors can create an account on The Reviver system to provide their medical services online. They can log in to their account using their credentials.

- Set Active Time: The doctor can set their active time on The Reviver system, indicating the times they are available for online consultations.

- Receive Consultation Requests: When a patient sends a consultation request, the doctor receives a notification through The Reviver system. The doctor can review the request and accept or reject it based on their availability and the patient's medical condition.

- Virtual Consultation: If the doctor accepts the consultation request, they can have a virtual consultation with the patient using the Zoom API integrated with The Reviver system. The doctor can provide medical advice and treatment to the patient.

- Receive Payment: After the consultation, the patient pays for the services provided by the doctor through The Reviver system. The payment is transferred to the doctor's account on the platform.

Chapter 2

Software Requirement Specifications

2.1 Requirement Inception

2.1.1 Inception

The inception of The Reviver project came from the need to provide accessible and convenient healthcare services to patients in Bangladesh. The COVID-19 pandemic has made it difficult for patients to visit doctors physically, leading to an increased demand for online medical services. The Reviver aims to bridge the gap between doctors and patients by providing a platform for virtual consultations.

2.1.2 Identifying Stakeholders

The stakeholders of The Reviver project include:

- Patients: The primary users of The Reviver platform who will be seeking medical advice and treatment from doctors online.
- Doctors: Medical professionals who will be providing their services through The Reviver platform.
- Administrators: Staff members who will be responsible for managing the platform, including maintaining the website, managing user accounts, and ensuring compliance with regulations.
- API provider: A third-party provider who will be responsible for managing payment transactions on The Reviver platform.

2.1.3 Recognizing Viewpoints

Different stakeholders have different perspectives on The Reviver platform, and it is crucial to recognize these viewpoints to ensure that the platform meets their needs. The following are the viewpoints of The Reviver stakeholders:

- Patients: Patients expect to find qualified doctors on the platform and have a seamless experience when scheduling and having virtual consultations. They also want the platform to be secure and ensure the confidentiality of their personal and medical information.
- Doctors: Doctors expect the platform to provide a way for them to connect with patients, manage their schedule, and receive payment for their services. They also want to be able to provide medical advice and treatment through the platform effectively.
- Administrators: Administrators expect the platform to be easy to manage and maintain, with features for managing user accounts, monitoring transactions, and ensuring compliance with regulations.
- Payment gateway provider: The payment gateway provider expects the platform to be integrated with their payment system, ensuring secure and efficient transactions.

2.1.4 Working Towards Collaboration

- Common Requirements:
  - Implement this in a way that benefits both the doctor and the patient, as well as new ways for third parties to benefit.
  - Doctors should be identifiable by their registration number.

- Doctors should be registered in the system using all the necessary details a doctor has usually.
- The system should be able to handle a large number of users simultaneously.
- The system must be reliable and available 24/7.
- The system must be scalable to accommodate future growth.
- The system must be accessible from different devices and platforms.
- Security: The system must be designed with security in mind to protect patient information, doctor information, and payment information.
- User-friendly interface: The user interface should be designed to be easy to use, intuitive, and accessible to users with different levels of technical expertise.
- Integration with Zoom API: The system should integrate with the Zoom API to facilitate virtual consultations between patients and doctors.
- Appointment scheduling: The system should allow patients to schedule appointments with doctors and provide doctors with a way to manage their schedules.
- Payment processing: The system should integrate with a payment gateway to securely process payments for medical consultations.
- Feedback and ratings: The system should allow patients to rate and provide feedback on the doctors they consult with, which can be used to improve the quality of service and help patients make informed choices.

- Conflicting Requirements:
  - The system must be secure, but it must also be easily accessible to patients and doctors.

- The system must be flexible enough to accommodate different types of medical consultations, but it must also be easy to use.
- The system must be scalable, but it must also be cost-effective.

- Final Requirements:
  - The system must be secure, reliable, scalable, and accessible from different devices and platforms.
  - The user interface must be user-friendly and intuitive.
  - The system must integrate with the Zoom API to facilitate virtual consultations between patients and doctors.
  - The system must allow patients to schedule appointments with doctors and provide doctors with a way to manage their schedules.
  - The system must integrate with a payment gateway to securely process payments for medical consultations.
  - The system should allow patients to rate and provide feedback on the doctors they consult with.
  - To create a scope that will act as a bridge between the doctor and the patient.
  - Able to search doctors based on locations, designations, fees.

2.1.5 Requirements Questionnaire

The final set of questions for The Reviver project are:

1. Is the platform user-friendly and easy to navigate?
2. Does the platform connect patients with doctors effectively?
3. Is the payment system secure and efficient?

4. Does the platform have a reliable security system to protect user data?
5. Are there any issues with the virtual consultation process?
6. Are there any areas for improvement in the platform?
7. Are the doctors satisfied with the platform's features and functionality?
8. Are the patients satisfied with the platform's features and functionality?

2.2 Requirements Elicitation

Requirement elicitation is the process of identifying, discovering, and documenting the needs and constraints of stakeholders for a software project. It involves understanding and capturing requirements from various sources such as end-users, customers, domain experts, and other stakeholders.

The process of requirement elicitation involves the following steps:

- Identifying stakeholders
- Understanding the stakeholders' needs and requirements
- Prioritizing the requirements
- Documenting the requirements
- Validating and verifying the requirements

2.2.1 Eliciting Requirements of The Reviver

The requirements for The Reviver were elicited using various techniques such as:

- Interviews with domain experts, doctors, and patients to understand their needs and requirements.

- Surveys to gather feedback from potential users about the features they would like to see in the system.
- Brainstorming sessions with the development team to identify and prioritize key features.
- Prototyping and user testing to validate the requirements and gather feedback on the system's usability.

2.2.2 Collaborative Requirements Gathering

Collaborative requirements gathering involves involving all stakeholders in the requirements elicitation process. It is a process where all stakeholders work together to identify, prioritize, and document the requirements for a project. It can involve techniques such as brainstorming sessions, workshops, and joint application design sessions.

Collaborative requirements gathering has several benefits, including:

- Improved communication and understanding between stakeholders
- Increased stakeholder buy-in and ownership of the requirements
- More comprehensive and accurate requirements
- Reduced risk of missed or misunderstood requirements

2.2.3 Usage Scenarios

The Reviver system has three types of users: guest users, authenticated users, and admin users. The usage scenarios for each of these users are:

- **Guest user**: A guest user can browse the system, view available doctors and their profiles, and read general information about the system. However,

a guest user cannot schedule an appointment or consult with a doctor until they have created an account and logged in.

- **Authenticated user**: An authenticated user can log in to the system, schedule appointments with doctors, and consult with doctors via video calls. Authenticated users can also provide feedback and ratings on the doctors they consult with.

- **Admin user**: An admin user has access to the system's administrative functions, such as managing doctor profiles, monitoring user feedback and ratings, and generating reports on system usage and performance.

2.2.4 Quality Function Deployment

Normal Requirements

- The system should allow patients to create and manage their accounts.

- The system should allow patients to search for doctors based on their specialization, availability, and location.

- The system should allow patients to book appointments with doctors based on their availability.

- The system should allow doctors to manage their schedules and view their upcoming appointments.

- The system should allow doctors to provide virtual consultations using the Zoom API.

- The system should allow patients to rate and provide feedback on the doctors they consult with.

- The system should integrate with a payment gateway to process payments for medical consultations.
- The system should be designed with security in mind to protect patient information, doctor information, and payment information.

Expected Requirements

- The user interface should be designed to be easy to use, intuitive, and accessible to users with different levels of technical expertise.
- The system should provide reminders to patients about upcoming appointments.
- The system should allow patients to cancel appointments if necessary.
- The system should allow doctors to update their availability and schedules in real-time.
- The system should allow patients to view their medical history and previous consultations.
- The system should provide doctors with a way to view their ratings and feedback from patients.

Exciting Requirements

- The system could use machine learning algorithms to recommend doctors to patients based on their medical history and preferences.
- The system could integrate with wearable devices to collect and analyze patient health data to provide personalized recommendations and treatment plans.

- The system could integrate with electronic health records (EHR) to provide doctors with a comprehensive view of their patients' medical history and previous treatments.

2.2.5 Elicitation Work Results

The elicitation work resulted in a clear understanding of the requirements for The Reviver system. The system should allow patients to create and manage their accounts, search for doctors, book appointments, and provide virtual consultations. The system should also allow doctors to manage their schedules, view their upcoming appointments, and provide consultations using the Zoom API. Additionally, the system should integrate with a payment gateway to process payments, and provide a user-friendly interface, reminders, and ratings/feedback. Exciting requirements such as machine learning algorithms and EHR integration were also identified as potential future enhancements for the system.

2.3 Modeling

2.3.1 Scenario Based Modeling

Use case Scenarios

Level 0	**Level 1**	**Level 2**	**Actors**
The Reviver System	auth	signup	user, doctor,db
		verify_otp	user, doctor, twilio api
		resend_otp	twilio api, user, doctor
		signin	user, doctor, db
		logout	user, doctor, db
	doctor	doctorprofile	doctor, db
		view_requests_of_user	doctor, db
		decline_request	doctor, db
	request	view_request_status	doctor, user, db
	response	scheduled_meeting_response	doctor, user , db
		meeting_room	doctor, user
		delete_recrod	doctor, user, db
		upload_prescription	doctor, user, db
	meeting	create_meeting	doctor, db
		authorize	zoom api, doctor
		callback	zoom api
	user	create_patient	user, db
		showpatients	user, db
		doctor_details_view	user, db
		delete_patient	user, db
		userprofile	user, db
		view_doctors_response	user, doctor, db
	search	find_doctor	doctor, user, db
		find_patient	doctor, user, db
		find_user	doctor, user, db

Table 2.1: Use case scenario

Use case Diagram

1. **Authentication**

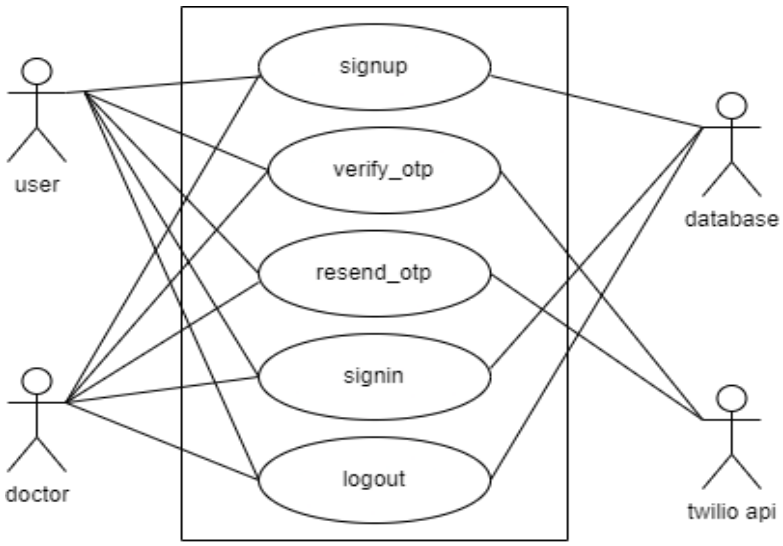

Figure 2.1: Use-Case - Authentication

2. **Doctor**

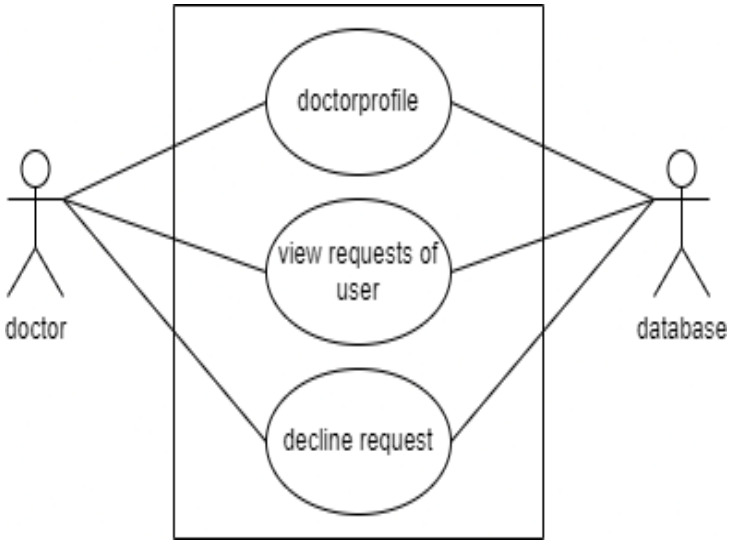

Figure 2.2: Use-Case - Doctor

3. **Request**

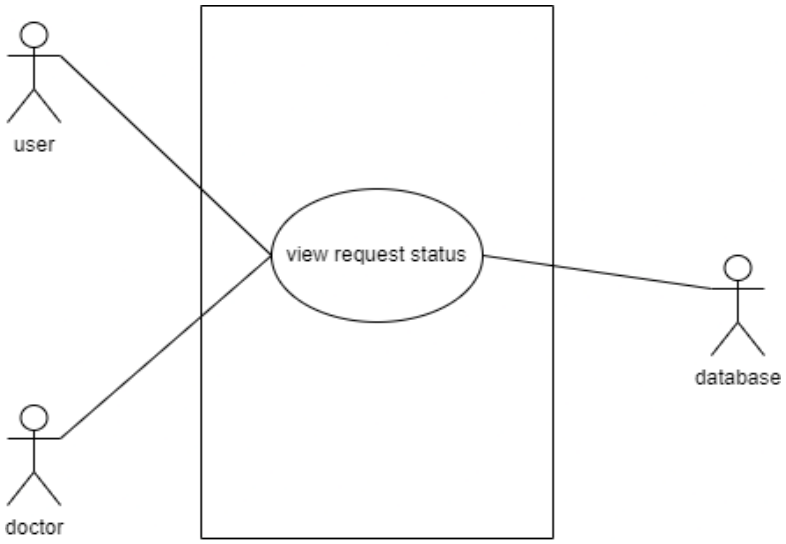

Figure 2.3: Use-Case - Request

4. **Response**

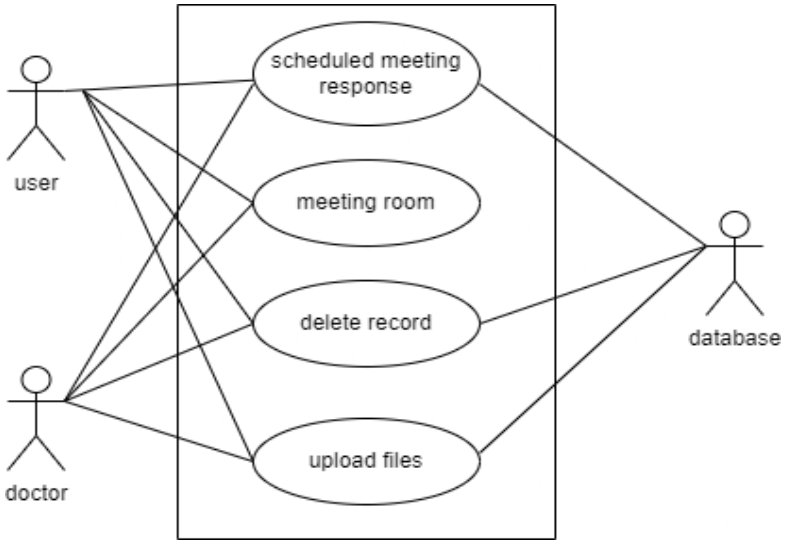

Figure 2.4: Use-Case - Response

5. **Meeting**

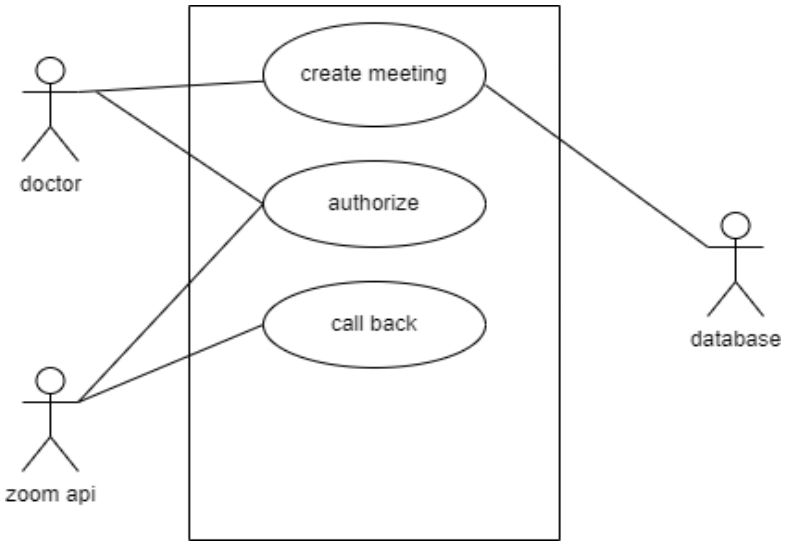

Figure 2.5: Use-Case - Meeting

6. **User & Patient**

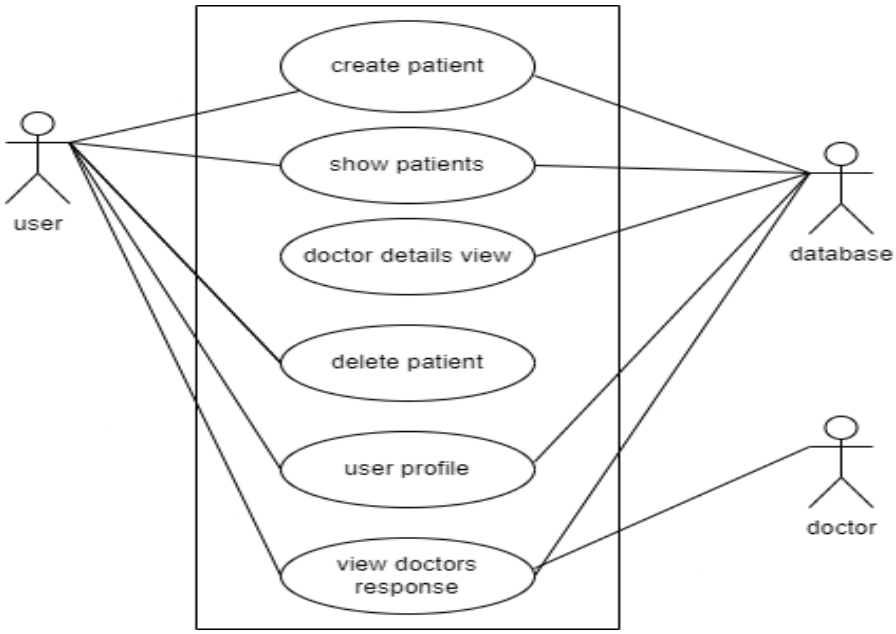

Figure 2.6: Use-Case - User

7. **Search**

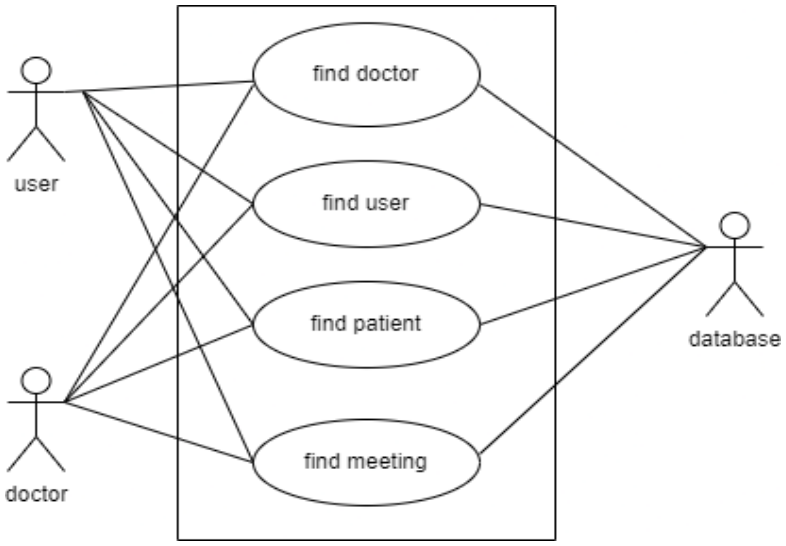

Figure 2.7: Use-Case - Search

Activity Diagram

1. **Login Signup Activity**

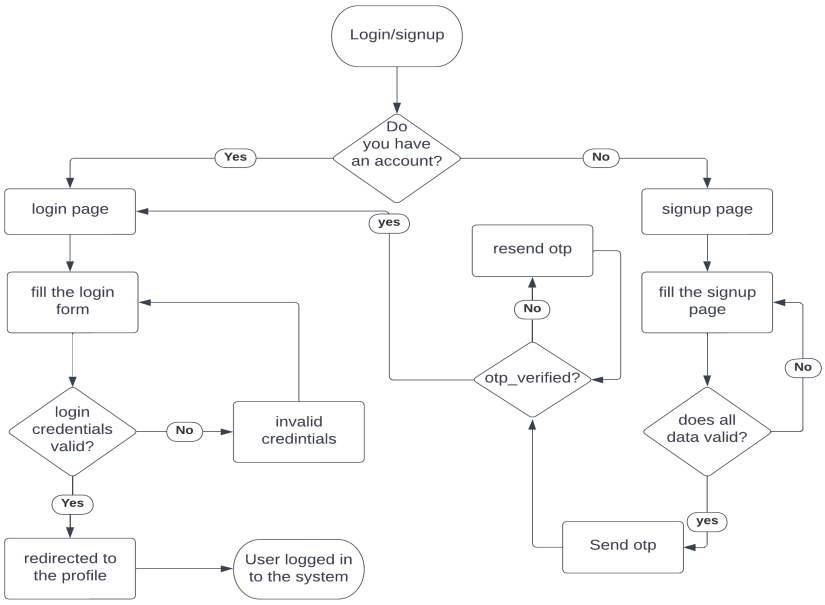

Figure 2.8: Activity Diagram - Login Signup

2. **Doctor Activity**

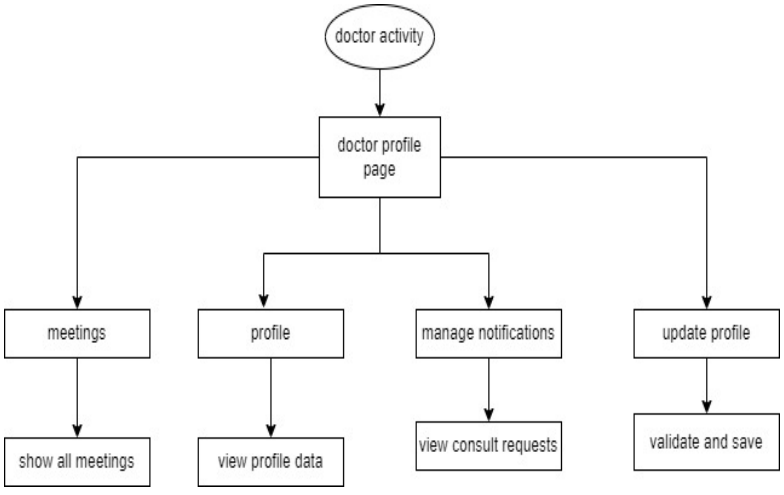

Figure 2.9: Activity Diagram - Doctor

3. **User Activity**

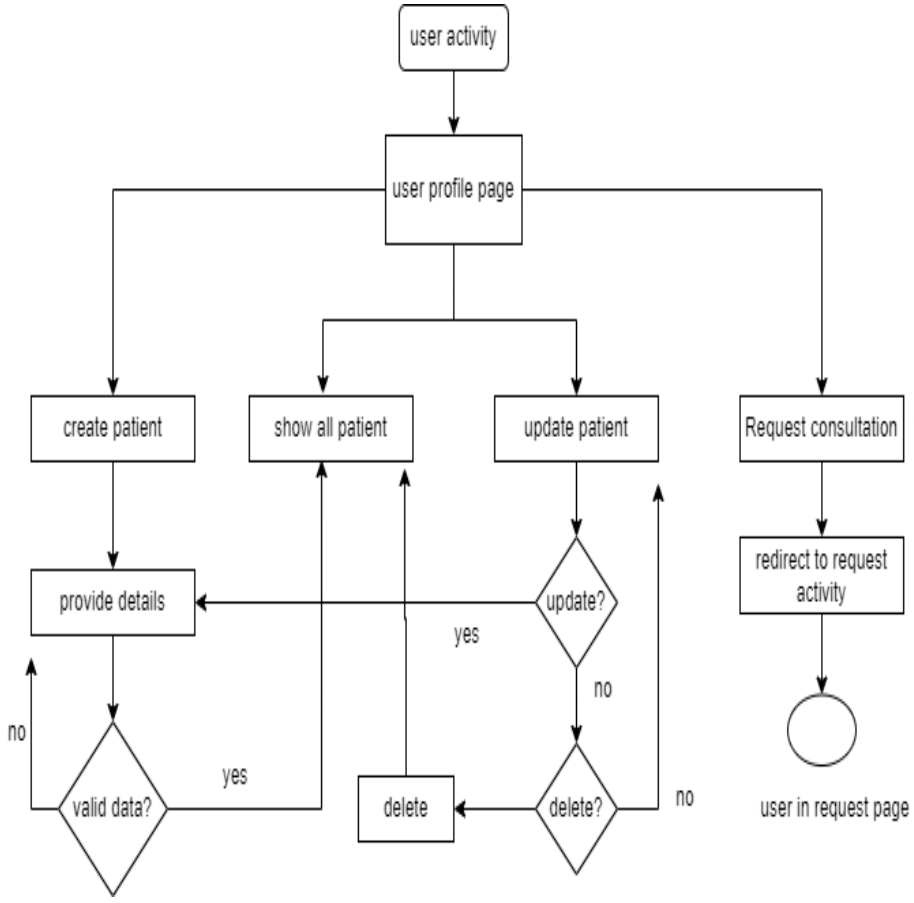

Figure 2.10: Activity Diagram - User

4. **Request Activity**

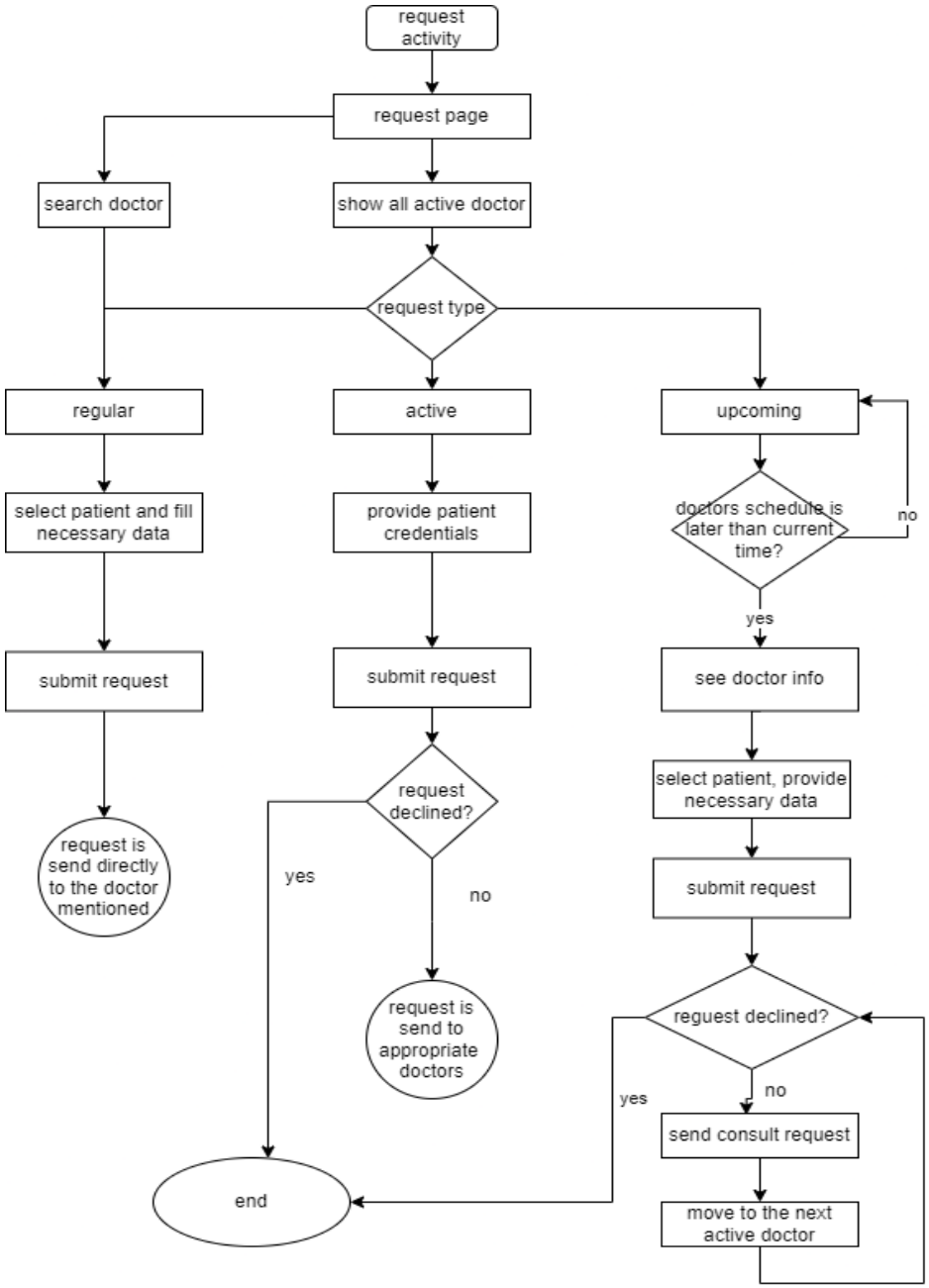

Figure 2.11: Activity Diagram - Request

5. **Response Activity**

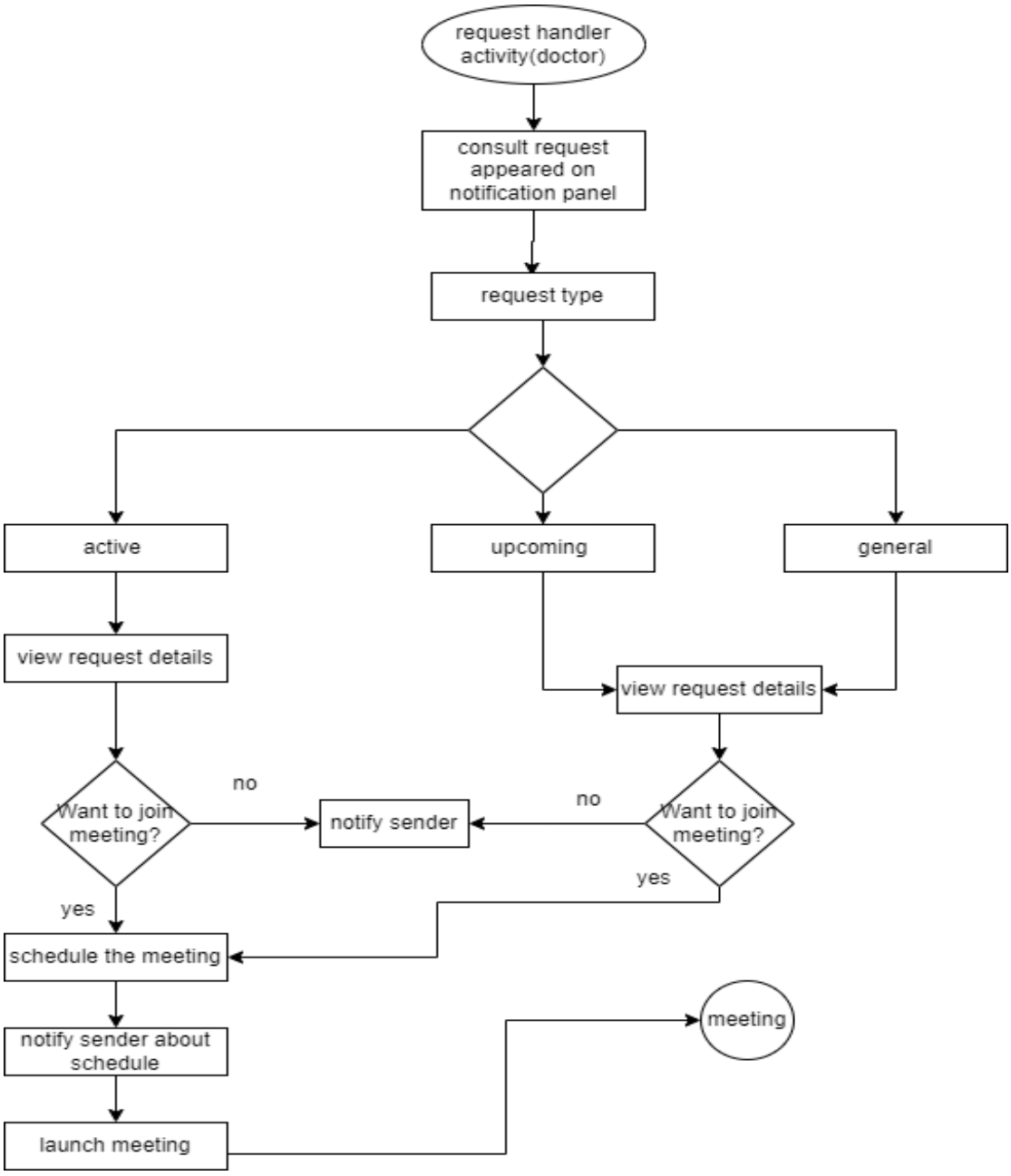

Figure 2.12: Activity Diagram - Response

6. **Search Activity**

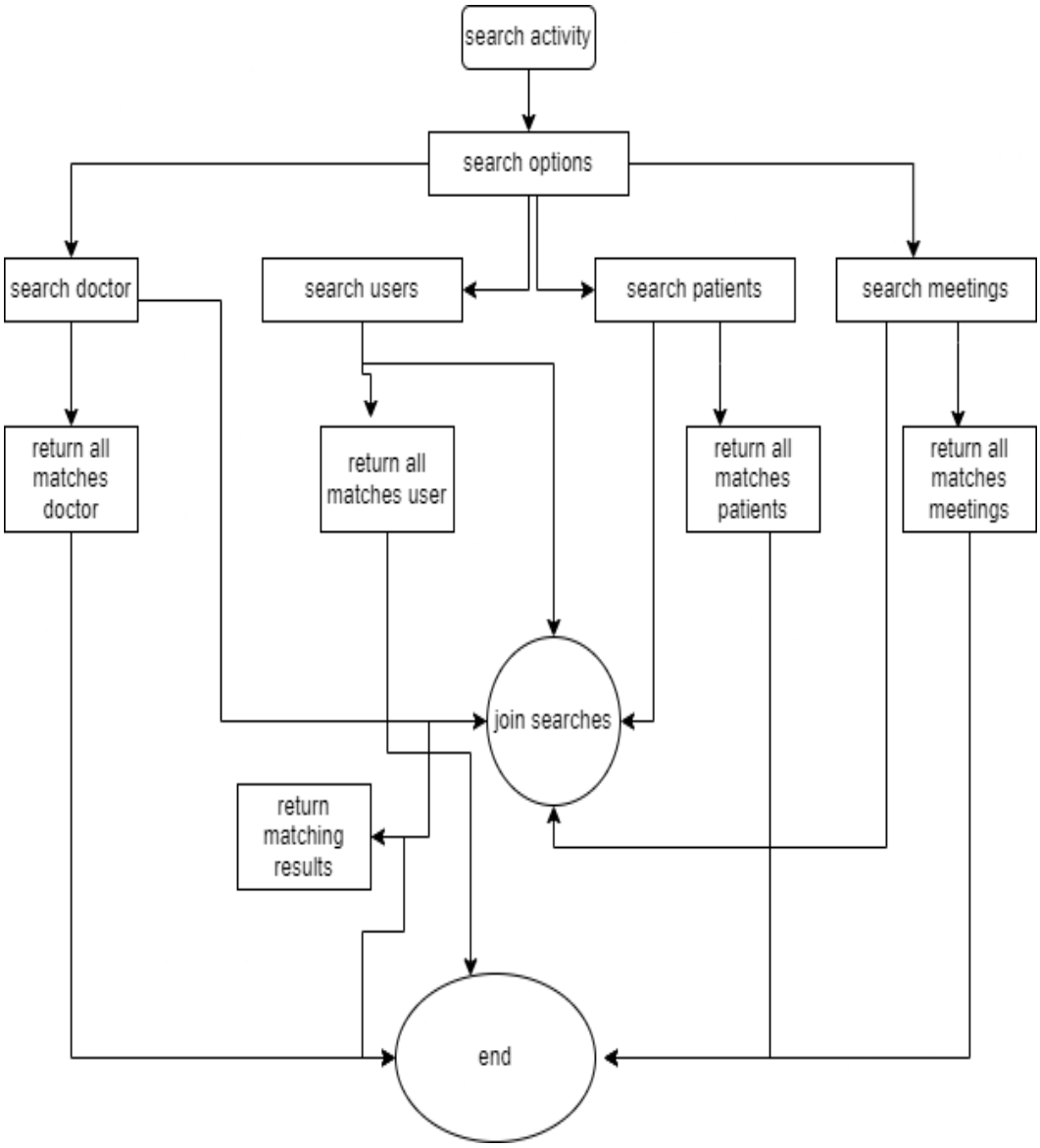

Figure 2.13: Activity Diagram - Search

2.3.2 Class Based Modelling

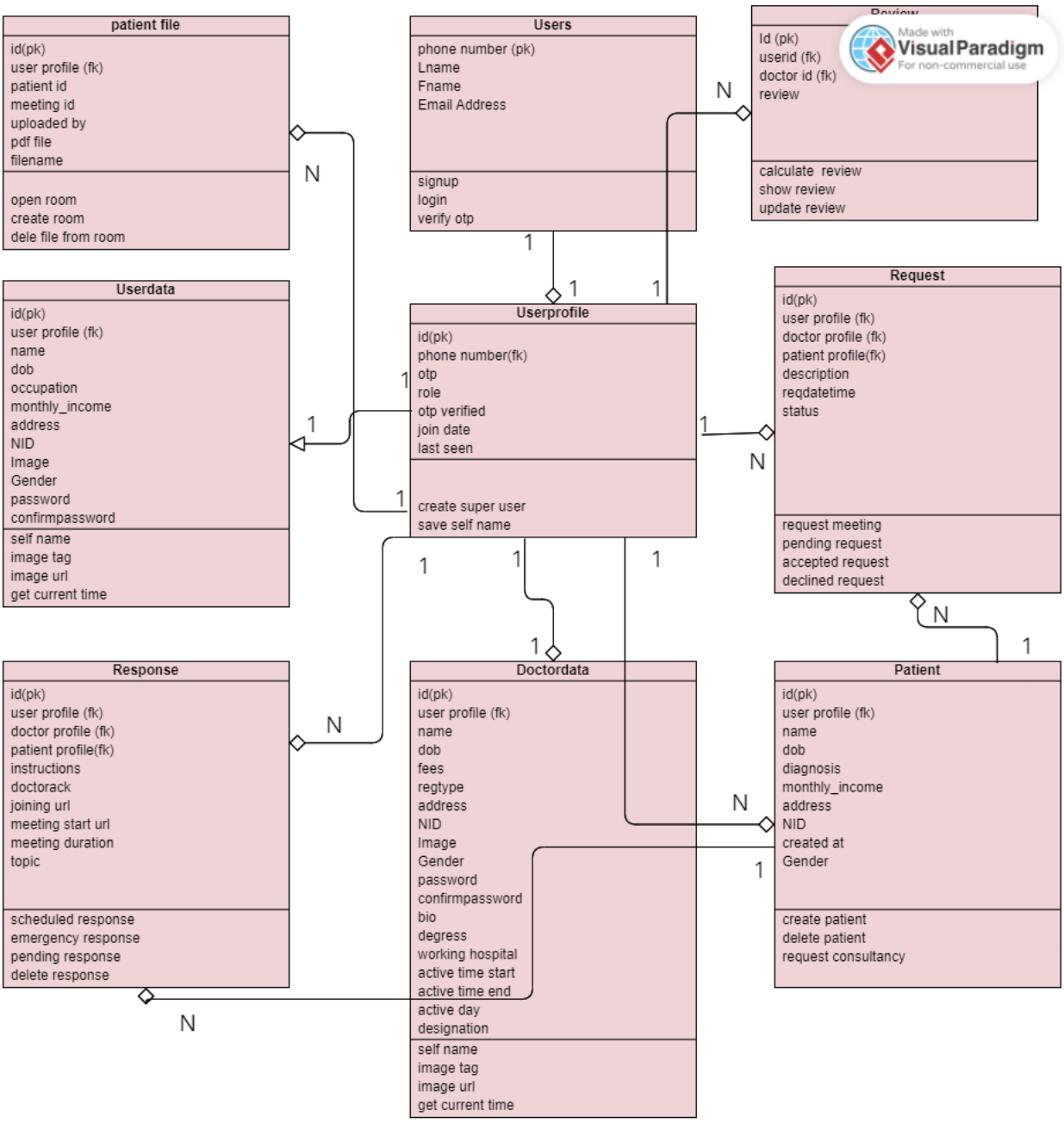

Figure 2.14: Class based modelling

Bibilography