



## **MedConnect - Medicine Donation Platform**

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This project report has been submitted in fulfilment of the requirements for the degree  
of **Bachelor of Science in Software Engineering**

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## APPROVAL

### APPROVAL


This project titled on “**MedConnect- Medicine Donation Platform**”, submitted by **Samen Yechar Joy (ID: 202-35-3113)** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.

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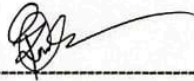
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I therefore declare that I have done this project under the oversight of “**Ms. Nusrat Jahan**”, “**Assistant Professor**”, Department of Software Engineering, Daffodil International University. Also declare that neither entire record nor any portion of this record has been submitted somewhere else for my degree.



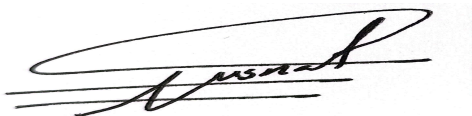
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I take this opportunity to record my sincere thanks to all the faculty members of the Department of Software Engineering for their help and encouragement.

Last but not least, I would like to thank to my parents, for their unconditional support, love and without this I would not have come this far.



## ABSTRACT

MedConnect is an innovative medical donation network that connects individuals or organisations with excess pharmaceuticals to those in need. In order to prevent pharmaceuticals from going to waste, the website offers a safe, user-friendly interface that enables donors—including individuals, pharmacies, and hospitals—to list unused but legitimate medications. Recipients can look for accessible medications and request donations based on their requirements; this is especially useful for low-income people and underprivileged communities. To maintain a secure and moral workplace, MedConnect places a strong emphasis on adherence to legal and regulatory requirements, such as those governing drug donations and data protection. Utilising contemporary web technologies like cloud hosting, ReactJS, and NodeJS, the platform is safe, scalable, and compatible with a wide range of devices. MedConnect's main objective is to improve access to necessary medications and decrease drug waste in order to promote a more just healthcare system. In addition to addressing a pressing public health concern, this platform encourages sharing and prudent use of healthcare resources.

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## **CHAPTER 1 INTRODUCTION**

### **1.1 Background**

Ensuring the effective distribution of medications is a major concern for healthcare systems worldwide. Waste of unneeded and unexpired pharmaceuticals is one of the most urgent problems. Due to expiration dates or modifications in medical treatment, millions of dollars' worth of pharmaceuticals are thrown out annually by patients, clinics, and pharmacies. In the meantime, many people, especially in impoverished areas, struggle to obtain necessary prescription drugs because of logistical or financial obstacles.

By developing a digital network that connects people or organisations with extra, unused pharmaceuticals to those in urgent need of them, MedConnect is suggested as a remedy for this discrepancy. MedConnect will ensure that life-saving medications are redistributed to the areas and individuals who need them the most while also reducing medical waste by utilising technology. By acting as a link between donors and recipients, this program seeks to improve health outcomes for vulnerable groups and boost the effectiveness of healthcare systems.

#### **1.1.1 Context and Relevance**

MedConnect works in the larger healthcare sector, concentrating on access, donation, and drug management. The research tackles a major worldwide problem: the large quantity of pharmaceuticals that are underused yet still effective but frequently end up in the trash. At the same time, many people find it difficult to buy or obtain necessary prescriptions, especially those living in underserved or low-income communities. There is a significant chance for innovation in hospital resource management because of this mismatch between surplus and necessity.

MedConnect's broader research area includes topics including digital health platforms, pharmaceutical waste reduction, public health, and healthcare access. Policymakers, healthcare professionals, and digital entrepreneurs are increasingly focussing on these areas in an effort to improve access to necessary medications and address inefficiencies in medicine delivery.

### **Current Trends in the Healthcare Industry:**

1. **Digital Transformation:** Telemedicine, online pharmacy, and health monitoring applications are just a few of the platforms created to increase access to healthcare services. There is also a growing trend towards digital health solutions. By providing a web-based platform that effectively links donors and beneficiaries, MedConnect supports this trend.
2. **Sustainability and Waste Reduction:** There is increasing pressure on the healthcare sector to cut waste, particularly the discarding of unnecessary prescription drugs. Drugs sometimes have stringent expiration dates, which might result in waste if they are not used or delivered effectively. By facilitating the responsible allocation of excess pharmaceuticals, MedConnect capitalises on this trend.
3. **Healthcare Accessibility:** Innovation is being propelled by a global emphasis on enhancing healthcare access for marginalised communities. Fair access to pharmaceuticals and medical treatment is becoming more and more important, especially in low-income or developing nations. By offering a system that guarantees necessary pharmaceuticals reach individuals who need them the most, MedConnect directly helps this objective.
4. **Regulatory and Compliance Needs:** Platforms that handle sensitive health data and medications now face difficulties due to stricter laws pertaining to drug safety, privacy (such as HIPAA and GDPR), and donation programs. MedConnect incorporates strong compliance measures into its platform to allay these worries.

### **Challenges:**

**Regulatory Compliance:** It can be difficult to make sure MedConnect complies with national and international rules governing medication donations, pharmaceuticals, and data protection.

**Security:** A very secure platform is necessary to safeguard private medical information and guarantee that medications are delivered to the right people.

**Integration with Current Systems:** Because healthcare supply chains and systems are sometimes disjointed, it can be difficult to integrate with pharmacies, medical facilities, and other healthcare providers.

### **Opportunities:**

**Market Need:** MedConnect is positioned as a useful service in the healthcare sector due to the evident need for solutions that address drug waste and lack of access.

**Partnerships:** To grow and broaden its reach, the platform may collaborate with pharmacies, hospitals, and healthcare non-governmental organisations.

**Social Impact:** By enhancing public health outcomes, cutting down on prescription waste, and fostering fair access to healthcare, MedConnect has the potential to have a significant social impact.

### **1.1.2 Problem Identification**

Access to affordable and essential medications remains a critical challenge, particularly for low-income and underserved populations. On the other hand, a significant amount of surplus, unexpired medications are often discarded by individuals, hospitals, and pharmacies due to lack of proper channels for redistribution. This creates a dual issue: the wastage of perfectly usable medicines and the unmet demand for these life-saving resources among vulnerable communities.

The healthcare industry struggles with this mismatch in supply and demand. Many organizations and individuals with surplus medications are unsure of how to donate them effectively while complying with legal and regulatory requirements. Additionally, there is no widely accessible, user-friendly platform that facilitates the safe and secure transfer of surplus medicines to those in need.

Another challenge is the lack of transparency and verification in existing donation systems, which raises concerns about the quality and authenticity of donated medications. Ensuring that the right medications reach the right recipients safely, while protecting sensitive health information, is a complex task that requires careful management and secure systems.

MedConnect aims to address these problems by creating a platform that bridges the gap between surplus and need. It offers a solution for donors to securely list and donate medications and provides recipients a means to easily search for and request what they need. MedConnect

also ensures that the donation process complies with regulatory standards, thus building trust and ensuring safety for all users

### **1.1.3 Purpose and Justification**

MedConnect's main goal is to develop a safe, effective, and legal platform that makes it easier for people and communities in need to donate and re-distribute excess pharmaceuticals. By offering a user-friendly digital solution that links donors—such as hospitals, pharmacies, and individuals—with recipients who are unable to obtain necessary prescriptions because of logistical or financial constraints, MedConnect seeks to solve the growing issue of medication waste.

MedConnect's potential to address several important problems in the healthcare system serves as its basis. It starts by addressing the moral and environmental issue of wasting effective drugs that may otherwise save the lives of those in need. MedConnect helps create a more sustainable healthcare system by cutting down on this waste.

By guaranteeing that low-income people who might not have the money to buy their prescribed medications have free access to these necessary pharmaceuticals, the platform also advances health fairness. By perhaps averting preventable health issues brought on by limited access to medications, this not only enhances individual health outcomes but also lessens the overall burden on healthcare systems.

Additionally, MedConnect assists donors by offering them a safe, effective, and lawful option to give pharmaceuticals while guaranteeing adherence to national and international privacy laws and drug donation statutes. The platform ensures that all transactions are safe and transparent by implementing strong verification procedures that foster confidence.

In conclusion, MedConnect's ability to decrease medicine waste, provide access to life-saving medications, and establish a more equal healthcare environment justifies its existence. It offers a solution that promotes a culture of responsible medication management for the benefit of donors, recipients, and the larger healthcare ecosystem.

#### **1.1.4 Scope**

By enabling the donation and redistribution of excess, unused pharmaceuticals to individuals in need, MedConnect is an online platform created to solve the problem of medication waste. The website links receivers who have trouble affording or obtaining necessary prescriptions with donors, including people, pharmacies, and hospitals.

Creating user-friendly interfaces for administrators, contributors, and recipients is part of the project. While administrators manage the platform's operations and guarantee legal and regulatory compliance, donors can list available pharmaceuticals, and recipients can browse and apply for these medications.

The platform's emphasis on security and compliance is one of its main features. The site will abide by stringent standards on medicine donations and data privacy, including HIPAA and GDPR. Additionally, it will put in place strong verification procedures to guarantee the authenticity of both donors and recipients.

MedConnect will feature automated communication and notification systems, providing updates on donation status to users. Additionally, the platform will allow feedback from recipients, enabling continuous improvement of user experience and trust-building.

The project will employ cloud hosting for scalability, allowing MedConnect to grow and expand geographically over time. However, the physical distribution of medications and ensuring the medical quality of donated drugs will not be within the scope of this project, as MedConnect will act as a facilitator rather than a handler of medications.

In summary, the scope of MedConnect is to create a reliable and scalable platform that bridges the gap between medication surplus and those in need, while ensuring safety, compliance, and a positive user experience.

## **1.2 Project Planning and Initiation**

### **Feasibility Study (Step-by-Step)**

The feasibility study for the MedConnect project assesses the viability and success of the platform from various perspectives: operational, market, technical, financial, and legal. Each

phase of the study examines critical factors that determine whether the project can proceed successfully and efficiently, ensuring that resources are utilized effectively and risks are minimized.

#### 1. **Technical Feasibility:**

**Platform:** MedConnect will use technologies like ReactJS for the front-end, NodeJS for the back-end, and cloud hosting (AWS/Google Cloud).

**Challenges:** Key concerns include integration with existing healthcare systems and ensuring strong data security.

**Conclusion:** Technically feasible with existing tools, but it requires skilled developers focused on scalability and security.

#### 2. **Operational Feasibility:**

**Resources:** A small but skilled team for development, legal compliance, and user support is needed.

**Workflow:** Donors and recipients will use the platform to list, search, and verify medications, supported by feedback loops.

**Conclusion:** Operationally feasible, requiring a user-friendly design and adequate training for stakeholders.

#### 3. **Legal Feasibility:**

**Regulations:** Must comply with drug donation laws, pharmaceutical regulations, and data privacy standards (HIPAA/GDPR).

**Risks:** Ongoing legal compliance requires a dedicated team and strict protocols for donation verification.

**Conclusion:** Legally feasible with proper compliance and regulatory partnerships.

#### 4. **Financial Feasibility:**

**Costs:** Initial platform development costs range between \$50,000 and \$150,000, plus operational and legal expenses.

**Revenue:** Opportunities for revenue include partnerships, premium services, and advertising.

**Conclusion:** Financially viable, with an expected break-even point within 12–18 months if growth is steady.

#### 5. **Market Feasibility:**

**Target Market:** Focus on low-income individuals, underserved communities, and donors from pharmacies, hospitals, and individuals.

**Need:** High demand exists for reducing medication waste and improving access to essential drugs.

**Conclusion:** Strong market demand with little competition, offering significant growth opportunities.

In summary, MedConnect is feasible across technical, operational, legal, financial, and market dimensions, with promising potential for success if executed with proper planning and resources.

#### **Phase 1 Preliminary Analysis & Project Scope Definition:**

This phase focuses on defining the scope and identifying the main problem MedConnect aims to solve: the large-scale waste of surplus medications and the lack of access to essential drugs for underserved populations. The project scope includes the development of a web-based platform that will connect donors (hospitals, pharmacies, and individuals) with recipients (people in need of medication but unable to afford it).

The analysis includes an assessment of the challenges, such as ensuring compliance with legal and pharmaceutical regulations, data privacy, and developing a user-friendly platform that supports safe transactions. The preliminary analysis concludes that there is a strong need for a solution that bridges the gap between medication waste and the unmet demand for medicines in low-income and underserved communities. The project scope covers key aspects such as user management, secure transaction processing, and legal compliance.

#### **Phase 2 Market Feasibility Analysis (or Market Research):**

By examining the target user base and comprehending market demand, the market potential for MedConnect is evaluated in this phase. The platform's main users will be beneficiaries from

low-income communities in need of access to reasonably priced pharmaceuticals as well as donors (hospitals, pharmacies, and private citizens). According to market research, there is a significant need for donated or reasonably priced pharmaceuticals in many areas, particularly in those with low incomes and little access to healthcare.

Additionally, the website gives healthcare organisations a chance to participate in social responsibility projects and cut down on medication waste. There is also little rivalry in this industry, according to the report, which suggests MedConnect has a good chance of establishing a distinct market niche. Partnerships, premium services, and advertising all have the potential to generate income.

### **Phase 3 Technical Feasibility Analysis:**

The technical feasibility of MedConnect focuses on whether the required technology is available and practical for developing the platform. MedConnect will be a web-based solution using technologies like ReactJS for the front-end, NodeJS for the back-end, and cloud services like AWS or Google Cloud for hosting and scaling the platform.

Key technical challenges identified include integrating with existing healthcare systems and ensuring data security for sensitive health information. The analysis concludes that the technical requirements can be met using current technologies, provided the team includes skilled developers with expertise in full-stack web development, cloud infrastructure, and cybersecurity. Security measures, including encryption, authentication, and secure data storage, will be prioritized to ensure compliance with privacy regulations like HIPAA and GDPR.

In conclusion, the technical feasibility study reveals that MedConnect is technologically achievable with a focus on scalability, security, and integration, making the project feasible from a technical standpoint.

### **Phase 4 Financial Feasibility Analysis:**

The financial feasibility of MedConnect involves evaluating the costs associated with developing, launching, and maintaining the platform, as well as identifying potential revenue streams that can ensure its sustainability.

1. **Development Costs:** The estimated cost for the initial platform development ranges from \$1500 to \$3000. This includes front-end and back-end development, user interface design, security measures, and integration with cloud-based hosting solutions

such as AWS or Google Cloud. The development team will consist of web developers, designers, and security experts.

2. **Operational Costs:** Monthly operational expenses are projected to be around \$500 to \$800. These include cloud hosting, database management, ongoing technical support, and system maintenance. Additional costs may arise from customer support services and security monitoring.

3. **Legal and Compliance Costs:** MedConnect must comply with drug donation laws and data privacy regulations such as HIPAA and GDPR. Legal and regulatory compliance will require an initial investment of around \$10,000 to \$30,000 for legal consultation, policy drafting, and ongoing monitoring of compliance.

4. **Marketing and Outreach Costs:** In order to attract users (donors and recipients) to the platform, initial marketing and outreach costs are estimated to range from \$5,000 to \$10,000. This will cover digital marketing campaigns, partnerships with healthcare organizations, and community outreach programs.

5. **Revenue Streams:**

**Partnerships:** Collaborations with healthcare institutions, NGOs, and pharmaceutical companies can generate revenue through service fees or sponsorships.

**Advertising:** The platform can host advertisements from pharmaceutical companies, healthcare providers, and medical equipment suppliers.

**Premium Services:** Hospitals, pharmacies, and clinics can opt for premium features, such as advanced analytics, priority listings, or data insights.

6. **Break-even Analysis:** MedConnect is projected to break even within 12 to 18 months, depending on user growth and partnership acquisitions. With a scalable business model and steady platform adoption, MedConnect can achieve financial sustainability through a combination of partnership agreements and service monetization.

In conclusion, MedConnect is financially feasible, with manageable development and operational costs, multiple revenue-generating opportunities, and a clear path to achieving financial sustainability within the first year of operation.

## 1.3 Target User Profile and Tentative Elicitation Process

### 1.3.1 Target User

MedConnect serves a diverse group of users and stakeholders, each with different needs and roles on the platform. The key users include:

1. **Donors:**

**Hospitals:** Medical institutions with surplus medications that they wish to donate to those in need.

**Pharmacies:** Pharmacies with unused or near-expiry medications that can be donated instead of discarded.

**Individuals:** Private citizens who have unused, unexpired medications they no longer need and want to donate.

2. **Recipients:**

**Low-income Individuals:** People from underserved communities who struggle to afford essential medications due to financial constraints.

**NGOs and Charitable Organizations:** Non-profit organizations that distribute medications to vulnerable populations, helping to ensure access to healthcare resources.

**Healthcare Clinics:** Small clinics and community health centers that require donations to provide medications to patients in need.

3. **Administrators:**

**Platform Managers:** Responsible for overseeing the platform's operations, including user verification, managing donations, and ensuring smooth interactions between donors and recipients.

**Regulatory Authorities:** Legal and healthcare regulatory bodies that monitor compliance with drug donation laws, data protection regulations, and healthcare standards.

## **Tentative Elicitation Process**

To ensure MedConnect meets the needs of its users and stakeholders, a structured elicitation process will be employed to gather requirements and insights. This process will involve:

1.       **Stakeholder Identification:** Identify key stakeholders, including donors, recipients, administrators, and regulatory bodies, to understand their specific needs, challenges, and expectations.
2.       **Interviews:** Conduct one-on-one interviews with representatives from hospitals, pharmacies, NGOs, and clinics to gather in-depth insights into their donation and medication access needs. Discuss legal requirements and platform functionalities with administrators and legal experts.
3.       **Surveys and Questionnaires:** Distribute surveys to a wider audience of potential users (both donors and recipients) to gather feedback on platform usability, desired features, and potential concerns such as security and compliance.
4.       **Workshops and Focus Groups:** Organize workshops and focus groups with healthcare professionals, pharmacists, and NGO representatives to explore key features, user workflows, and pain points. These sessions will help refine the platform's design and functionality.
5.       **Prototyping and Feedback:** Create early prototypes of the platform and present them to stakeholders for feedback. Usability testing will be conducted to gather insights on how intuitive and effective the user interface is for donors and recipients.
6.       **Legal and Regulatory Consultation:** Engage legal teams and regulatory authorities to ensure that MedConnect complies with all relevant pharmaceutical regulations and data protection laws, ensuring that the platform meets all necessary legal requirements.

### **7. Observation**

**Objective:** Observe how users currently manage donation or medication requests to understand their needs better.

**Method:** Spend time in clinics, NGOs, or pharmacies to see how surplus medications are handled and distributed.

**Output:** Insight into potential gaps MedConnect can fill and improvements to streamline processes.

## 8. Document Analysis

**Objective:** Review existing healthcare and pharmaceutical guidelines, legal documentation, and best practices for donation platforms.

### Documents Reviewed:

Drug donation laws and pharmaceutical regulations.

Data privacy regulations (e.g., HIPAA, GDPR).

Similar platforms' processes for donation or resource distribution.

**Output:** Compliance requirements and best practices incorporated into the platform's design.

## 9. Review and Validation

**Objective:** Present the gathered requirements to all stakeholders for review and validation.

**Method:** Circulate the consolidated requirements document and hold validation sessions to confirm that all needs have been captured accurately.

**Output:** Approved and prioritized requirements ready for development.

### 1.3.2 User profile

Table 0: User Profile for MedConnect Donor

User Class	Note on Characteristics
Type of user	Donor (Hospitals, Pharmacies, Individuals)

Age range	25-65
Frequency of use	Occasional (when surplus medications are available)
Mandatory	No, participation is voluntary
Computer experience	Varies from moderate to advanced
Education	Ranges from high school diploma to higher education
goal	To donate surplus, unexpired medications
Language skills	Basic to advanced, depending on geographic region
Number of users	Thousands, including institutions and individuals
Training	Minimal training required, platform is user-friendly
Others system use	May use inventory systems or other donation platforms
Way of working	Typically works by submitting donation forms online

Table 1: User Profile for MedConnect Recipient

<b>User Class</b>	<b>Note on Characteristics</b>
Type of user	Recipient (Low-income individuals, NGOs, Clinics)
Age range	18-60
Frequency of use	Frequent (requests depend on medication needs)
Mandatory	No, use is voluntary
Computer experience	Basic to moderate
Education	Varies, ranging from basic education to higher education
goal	To search for and apply for available medications
Language skills	Basic to fluent, depending on region
Number of users	Tens of thousands, including individuals and healthcare centers
Training	Tens of thousands, including individuals and healthcare centers
Others system use	May also interact with healthcare or charity systems
Way of working	Typically works through web-based or mobile applications

Table 2: User Profile for MedConnect Administrator

<b>User Class</b>	<b>Note on Characteristics</b>
Type of user	Administrator (Platform Managers, Regulators)
Age range	30-55
Frequency of use	Daily (ongoing monitoring and management)
Mandatory	Yes, required to manage and maintain the platform
Computer experience	Advanced
Education	Higher education, typically in technology or healthcare
goal	To oversee platform operations and ensure legal compliance
Language skills	Fluent, depending on the region
Number of users	Small group (admin team)
Training	Required, specific training for system administration
Others system use	May use compliance monitoring tools and admin dashboards

Way of working	Operates mainly through web-based admin interfaces
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### 1.4 Project Block Diagram

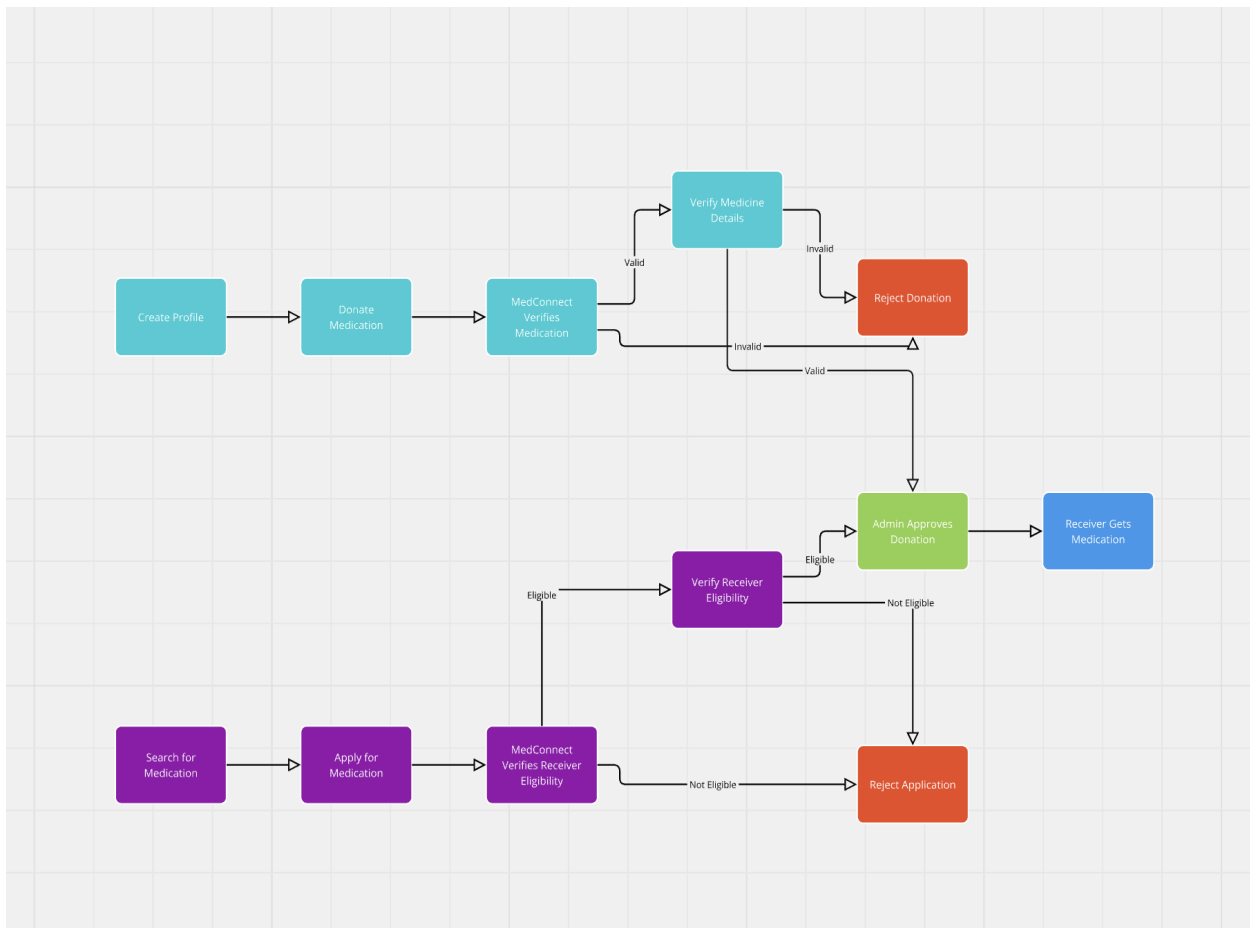


Figure 1: System Block Diagram

### Block Diagram Overview

#### 1. Donor Process

**Create Profile:** Donors begin by creating a personal profile on the MedConnect platform.

**Donate Medication:** After profile creation, donors can list medications they wish to donate.

**Flow Connection:** The process flow connects to the "MedConnect Verifies Medication" section, where the donation is reviewed.

## 2. Receiver Process

**Search for Medication:** Receivers search the platform for available medications that meet their needs.

**Apply for Medication:** Once a suitable medication is found, receivers can apply to receive it.

**Flow Connection:** The application process connects to the "MedConnect Verifies Receiver Eligibility" section for further evaluation.

## 3. MedConnect (Platform)

### Verify Medicine Details:

Decision Box:

If the medication details are valid, the process proceeds.

If invalid, the donation is rejected.

### Verify Receiver Eligibility:

Decision Box:

If the receiver is eligible, the process proceeds.

If not eligible, the application is rejected.

## 4. Admin

**Approve or Reject Donation:** Based on the verifications conducted by MedConnect, the admin has the authority to approve or reject the medication donation.

**Flow Continuation:** For approved donations, the process continues to the "Receiver Gets Medication" stage, where the receiver obtains the approved medication.

## 1.5 System Requirements

### 1.5.1 Hardware Requirements

To effectively run the MedConnect platform, the following hardware specifications are recommended:

#### **Server Requirements:**

CPU: Quad-core or higher (e.g., Intel Xeon or equivalent)

RAM: Minimum 16 GB

Storage: 1 TB SSD or higher for fast read/write performance

Network: High-speed internet connection with minimum 1 Gbps bandwidth

Backup system: Automated backup storage with redundancy (RAID configurations)

#### **Client Requirements:**

Device: Desktop, laptop, or mobile device with modern browser support

RAM: Minimum 4 GB

Processor: Dual-core processor

Storage: At least 50 GB of free space for software installations and cache management

Internet: Reliable broadband connection with at least 5 Mbps for optimal performance

## 1.5.2 Software Requirements

The following software components are necessary to build and operate the MedConnect platform:

### **Server-Side:**

Operating System: Ubuntu 20.04 LTS or any other stable Linux-based OS

Backend: Node.js

Database: MongoDB for data storage

Web Server: Nginx or Apache for serving static and dynamic content

Hosting: AWS, Google Cloud, or any cloud platform that supports auto-scaling and secure data management

Security: SSL certification for secure communication, firewall settings, and data encryption software

### **Client-Side:**

Frontend Framework: ReactJS for creating interactive user interfaces

Browser: Latest versions of Google Chrome, Firefox, Microsoft Edge, or Safari

API Client: Postman and Fetch API for handling data requests to and from the server

Mobile: Optional support for mobile apps through React Native (if building mobile versions)

### **Development Tools:**

IDE: Visual Studio Code

Version Control: GitHub for collaboration and code management

### 1.5.3 Constraints and Dependencies

There are several constraints and dependencies that could impact the implementation and success of the MedConnect platform:

**Regulatory Compliance:** The platform must comply with regulations such as HIPAA (for data protection in healthcare) and GDPR (for users in Europe). Non-compliance may lead to legal challenges.

**Data Security:** The system relies heavily on security measures, including data encryption, user authentication, and regular vulnerability assessments. It must ensure that sensitive information like patient details and donation data is not compromised.

**Integration with External Systems:** MedConnect may need to integrate with external hospital systems, pharmacy databases, or healthcare APIs for seamless operation. Dependency on these external systems might slow down certain processes or cause delays if third-party services experience downtime.

**Internet Connectivity:** Since it is a web-based system, the platform is dependent on reliable internet connections both for the platform server and its users. Limited or no connectivity could result in disrupted services.

**User Training and Adoption:** As MedConnect is a new platform, successful adoption will require proper user training and onboarding processes for donors, receivers, and administrators to use the system effectively.

## 1.6 Project Scheduling

	Week 1-2	Week 3-4	Week 5-6	Week 7-8	Week 9-10	Week 11-12	Week 13-14
Project Initiation	█						
Requirements Gathering	█	█					
Designing and planning phase		█	█				
Front-end Development Phase			█	█			
Back-end Development Phase				█	█		
Testing Phase					█		
User Acceptance Testing					█		
Deployment and launch						█	
Post-launch Evaluation						█	
Feedback Incorporation						█	
Optimization							█
Final Testing							█
Documentation							█
Project closure							█
Final Review							█

## 1.7 Summary

This chapter outlines the critical foundation for the MedConnect platform, detailing the system requirements and planning necessary for its successful implementation. The hardware and software requirements specify the technical infrastructure needed, highlighting the importance of scalability, security, and performance. The dependencies and constraints section emphasizes the regulatory, security, and integration challenges that must be addressed to ensure smooth operations. Overall, this chapter provides a comprehensive framework for building, deploying, and maintaining the MedConnect platform while identifying potential hurdles that need to be managed throughout the project lifecycle.

## CHAPTER 2 DESIGN AND IMPLEMENTATION

### 2.1 Introduction

This chapter delves into the design and implementation of **MedConnect**, a web-based platform designed to bridge the gap between surplus medications and underserved populations in need. The chapter outlines the architectural and functional blueprint of the system, detailing how the platform's core components interact to achieve its objectives of reducing medical waste and improving healthcare access. It describes the use of modern technologies, such as ReactJS for the front-end, NodeJS for the back-end, and cloud services for hosting, ensuring a scalable, secure, and efficient system. Additionally, the chapter provides insights into the implementation

of key features, such as user registration, donation and request workflows, and admin oversight functionalities.

This section also focuses on the alignment of the design with the project’s goals, emphasizing usability, data security, and compliance with healthcare regulations. By integrating robust design principles with efficient coding practices, MedConnect offers a reliable platform that meets the needs of donors, recipients, and administrators. The subsequent sections provide a detailed exploration of the system architecture, database design, and functional modules, followed by an overview of the implementation strategy.

## 2.2 Functional Requirements

The functional requirements of **MedConnect** define the core capabilities and behaviors that the platform must exhibit to fulfill its purpose of facilitating medication donations. These requirements focus on ensuring a seamless experience for all user types—donors, recipients, and administrators—while maintaining efficiency and security.

Key functionalities include user registration, profile management, and secure login processes for both donors and recipients. Donors can list surplus medications, manage their donations, and track their contribution history, while recipients can search for available medications, apply for donations, and monitor request statuses. Administrators play a crucial role in overseeing user activities, verifying accounts, managing donations and requests, and ensuring compliance with healthcare regulations.

The system also incorporates additional features such as notifications, health tips, a feedback mechanism, and an FAQ section to enhance user engagement and platform usability. These functional requirements form the foundation of MedConnect, ensuring that it meets its objectives of reducing medical waste and improving access to essential medications for underserved communities.

<b>FR01</b>	<b>Registration/Create Profile</b>
<b>Description</b>	Users will provide essential information, such as email, name, and password, to register on the platform.
<b>Stakeholder</b>	Donor, Receiver

<b>FR02</b>	<b>Login</b>
<b>Description</b>	Users will log in with their username and password provided during registration. After validation, users will be either granted or denied access to the system.

<b>Stakeholder</b>	Donor, Receiver, Admin

<b>FR03</b>	<b>Edit Profile</b>
<b>Description</b>	Users can modify their profile if any information needs to be corrected.
<b>Stakeholder</b>	Donor, Receiver

<b>FR04</b>	<b>Available medicines</b>
<b>Description</b>	Users can view a list of available medicines. Donors can also see this list to identify opportunities for emergency donations.
<b>Stakeholder</b>	Donor, Receiver, Admin

<b>FR05</b>	<b>Apply medicine</b>
<b>Description</b>	In case of emergency, a user can apply for medicine by filling out a form with required details and submitting it.
<b>Stakeholder</b>	Receiver

<b>FR06</b>	<b>Apply donation</b>
<b>Description</b>	Donors can apply to donate medicine when they see a shortage or want to contribute.
<b>Stakeholder</b>	Donor

<b>FR07</b>	<b>Get Notifications</b>
<b>Description</b>	This includes notifications about the status of their donations, applied medicines (e.g., approved, pending, or rejected), system updates, or important announcements.
<b>Stakeholder</b>	Donor, Receiver

<b>FR08</b>	<b>Search medicine</b>
<b>Description</b>	Users can search for specific medicines if they are not listed in the available options.
<b>Stakeholder</b>	Donor, Receiver, Admin

<b>FR09</b>	<b>Manage health tips</b>
<b>Description</b>	Admins can add, remove new health tips as necessary.
<b>Stakeholder</b>	Admin

<b>FR10</b>	<b>Reset password</b>
<b>Description</b>	Users can request a password reset if they forget their credentials. Admins will provide a process to update it.
<b>Stakeholder</b>	Donor, Receiver, Admin

<b>FR11</b>	<b>FAQ</b>
<b>Description</b>	A section with frequently asked questions and answers will be available to help users easily navigate the platform.
<b>Stakeholder</b>	Donor, Receiver, Admin

<b>FR12</b>	<b>Contact Admin</b>
<b>Description</b>	This feature ensures that receivers can easily seek help or clarification, improving user satisfaction and ensuring efficient resolution of issues. It also enhances transparency and trust in the platform's operations.
<b>Stakeholder</b>	Donor, Receiver, Admin

<b>FR13</b>	<b>Manage medicines</b>
<b>Description</b>	Admins can add new medicines donated to the list of available medicines and also can remove medicines run out of stock.
<b>Stakeholder</b>	Admin

<b>FR14</b>	<b>Add photos</b>
<b>Description</b>	Admin can add photos in the gallery.
<b>Stakeholder</b>	Admin

<b>FR15</b>	<b>Manage applications</b>
<b>Description</b>	Admin can approve or reject applications of donar and receiver.
<b>Stakeholder</b>	Admin

<b>FR16</b>	<b>View lists</b>
<b>Description</b>	Admin can view a list of donor and receiver.
<b>Stakeholder</b>	Admin

<b>FR17</b>	<b>Logout</b>
<b>Description</b>	Users can log out of the system when they are done using the app.
<b>Stakeholder</b>	Donor, Receiver, Admin

## **2.3 Non-Functional Requirements**

The non-functional requirements of the **MedConnect** platform define the system's overall quality, performance, and reliability. These requirements ensure the platform operates efficiently while providing a secure and user-friendly experience.

### **2.3.1 Performance**

The system should handle multiple users simultaneously without significant delays, ensuring fast response times for all operations, such as loading available medicines or submitting requests.

### **2.3.2 Reliability**

The system must ensure high availability, with minimal downtime, and provide consistent performance during peak usage.

### **2.3.3 Portability**

Portability refers to the ability of the MedConnect platform to function seamlessly across different environments, devices, and operating systems. Ensuring portability is critical for MedConnect to reach a diverse user base, including donors, recipients, and administrators, who may use a variety of devices and platforms to access the system.

### **2.3.4 Scalability**

The platform should be scalable to accommodate a growing number of users and data as MedConnect expands its reach to new regions or partnerships.

### **2.3.5 Security**

Robust data encryption and secure authentication mechanisms must be implemented to protect sensitive user information, such as login credentials and personal details, in compliance with regulations like HIPAA and GDPR.

### **2.3.6 Usability**

The interface should be intuitive and accessible for users with varying levels of technical expertise, ensuring ease of use for all stakeholders, including donors, recipients, and administrators.

### **2.3.7 Maintainability**

The platform should be designed to allow for easy updates, bug fixes, and feature enhancements without disrupting ongoing operations.

These non-functional requirements ensure the **MedConnect** platform delivers a seamless, secure, and scalable solution, fostering trust and satisfaction among its users.

## **2.4 Object-oriented System design using UML**

### **2.4.1 Use Case Diagram**

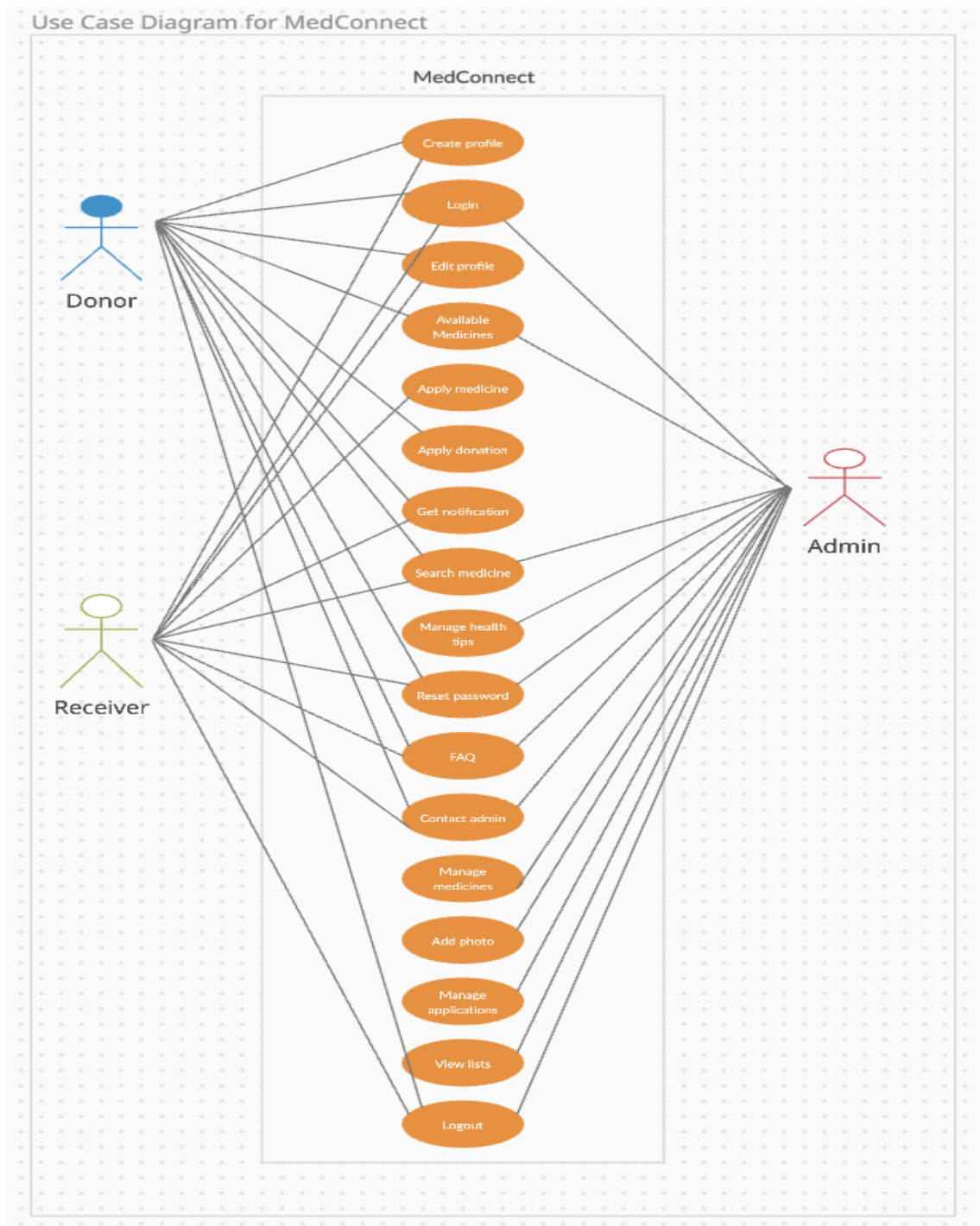


Figure 2: Use case Diagram

## 2.4.2 Case Description

### Case Description-01: Register/Create profile

Use Case	Register/Create profile
Goal	Allow users to create an account to access the MedConnect platform.
Precondition	The user must have access to the MedConnect platform and an internet connection to complete the registration process.
Success End Condition	Notification: "Registration successful! Your profile has been created."
Failed End Condition	Notification: "Registration failed! Please check the credentials and try again."
Primary Actors	Donor, Receiver
Secondary Actors	None
Trigger	The user chooses to create a new account by selecting the "Register" option on the login page.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 521 684 577">1.</td> <td data-bbox="684 521 1415 577">Press the “Register” button on the login page.</td> </tr> <tr> <td data-bbox="612 577 684 633">2.</td> <td data-bbox="684 577 1415 633">The system displays a registration form.</td> </tr> <tr> <td data-bbox="612 633 684 734">3.</td> <td data-bbox="684 633 1415 734">The user enters required details (e.g., name, email, password, role as donor or receiver).</td> </tr> <tr> <td data-bbox="612 734 684 790">4.</td> <td data-bbox="684 734 1415 790">Press the “Submit” button.</td> </tr> <tr> <td data-bbox="612 790 684 846">5.</td> <td data-bbox="684 790 1415 846">The system validates the entered information.</td> </tr> <tr> <td data-bbox="612 846 684 1003">6.</td> <td data-bbox="684 846 1415 1003"> <p>The system saves the user’s profile in the database.</p> <p>Notification: “Registration successful! Your profile has been created.”</p> </td> </tr> </table>	1.	Press the “Register” button on the login page.	2.	The system displays a registration form.	3.	The user enters required details (e.g., name, email, password, role as donor or receiver).	4.	Press the “Submit” button.	5.	The system validates the entered information.	6.	<p>The system saves the user’s profile in the database.</p> <p>Notification: “Registration successful! Your profile has been created.”</p>
1.	Press the “Register” button on the login page.												
2.	The system displays a registration form.												
3.	The user enters required details (e.g., name, email, password, role as donor or receiver).												
4.	Press the “Submit” button.												
5.	The system validates the entered information.												
6.	<p>The system saves the user’s profile in the database.</p> <p>Notification: “Registration successful! Your profile has been created.”</p>												

Alternative Flows	1.1	The system encounters an error while saving details.
		1.1.a. Notification: “System Error. Please try again later.”
	4.1	The user submits incomplete or invalid information (e.g., blank fields, invalid email format).
		4.1.a. The system highlights errors and prompts: “Please correct the highlighted fields.”
	5.1	The user attempts to register with an email already in use.
		5.1.a. Notification: “This email is already registered. Please log in or use a different email.”
Quality Requirements	<p>The registration process must be completed within 5 minutes.</p> <p>All required fields must be validated before submission.</p> <p>The system must ensure data encryption for sensitive details like passwords.</p>	

#### Case Description-02: Login

Use Case	Login
Goal	Allow users to securely access the MedConnect platform by verifying their credentials.
Precondition	The user must already have a registered account with valid login credentials (username/email and password).
Success End Condition	Notification: “Login successful! Welcome to MedConnect.”
Failed End Condition	Notification: “Login failed! Invalid credentials. Please try again.”
Primary Actors	Donor, Receiver, Admin

Secondary Actors	None													
Trigger	The user chooses the “Login” option on the MedConnect homepage.													
Description / Main Success Scenario	<table border="1" data-bbox="612 721 1418 1245"> <tr> <td data-bbox="612 721 687 781">1.</td> <td data-bbox="687 721 1418 781">The user clicks on the “Login” button on the homepage.</td> </tr> <tr> <td data-bbox="612 781 687 842">2.</td> <td data-bbox="687 781 1418 842">The system displays a login form.</td> </tr> <tr> <td data-bbox="612 842 687 938">3.</td> <td data-bbox="687 842 1418 938">The user enters their registered email/username and password.</td> </tr> <tr> <td data-bbox="612 938 687 999">4.</td> <td data-bbox="687 938 1418 999">The user presses the “Submit” button.</td> </tr> <tr> <td data-bbox="612 999 687 1059">5.</td> <td data-bbox="687 999 1418 1059">The system validates the provided credentials.</td> </tr> <tr> <td data-bbox="612 1059 687 1245">6.</td> <td data-bbox="687 1059 1418 1245">           If the credentials are correct, the system grants access to the user’s dashboard.             Notification: “Login successful! Welcome to MedConnect.”         </td> </tr> </table>		1.	The user clicks on the “Login” button on the homepage.	2.	The system displays a login form.	3.	The user enters their registered email/username and password.	4.	The user presses the “Submit” button.	5.	The system validates the provided credentials.	6.	If the credentials are correct, the system grants access to the user’s dashboard.  Notification: “Login successful! Welcome to MedConnect.”
1.	The user clicks on the “Login” button on the homepage.													
2.	The system displays a login form.													
3.	The user enters their registered email/username and password.													
4.	The user presses the “Submit” button.													
5.	The system validates the provided credentials.													
6.	If the credentials are correct, the system grants access to the user’s dashboard.  Notification: “Login successful! Welcome to MedConnect.”													

Alternative Flows	1.1	The user enters an incorrect email/username or password.
		1.1.a.Notification: “Invalid credentials. Please check your details and try again.”
	4.1	The user selects the “Forgot Password” option.
		4.1.a. The system redirects the user to the password recovery process.
	5.1	The system encounters an error during authentication.
		5.1.a. Notification: “System error. Please try again later.”
	Quality Requirements	<p>The login process must complete within 2 seconds after submitting credentials.</p> <ul style="list-style-type: none"> <li>-Passwords must be securely encrypted and validated without storing them in plain text.</li> <li>-Failed login attempts must be limited to prevent brute-force attacks.</li> </ul>

#### Case Description-03: Edit profile

Use Case	Edit profile
Goal	Allow users to update their personal information or account details in the MedConnect platform.
Precondition	The user must be logged in to the system to access the profile editing feature.
Success End Condition	Notification: “Profile updated successfully!”
Failed End Condition	Notification: “Profile update failed! Please check the input details and try again.”

Primary Actors	Donor, Receiver												
Secondary Actors	None												
Trigger	The user selects the “Edit Profile” option from the dashboard or user menu.												
Description / Main Success Scenario	<table border="1"> <tr> <td>1.</td> <td>The user navigates to the “Edit Profile” section.</td> </tr> <tr> <td>2.</td> <td>The user navigates to the “Edit Profile” section.</td> </tr> <tr> <td>3.</td> <td>The user updates their personal information (e.g., name, contact information, address).</td> </tr> <tr> <td>4.</td> <td>The user presses the “Save Changes” button.</td> </tr> <tr> <td>5.</td> <td>The system saves the changes in the database.</td> </tr> <tr> <td>6.</td> <td>Notification: “Profile updated successfully!”</td> </tr> </table>	1.	The user navigates to the “Edit Profile” section.	2.	The user navigates to the “Edit Profile” section.	3.	The user updates their personal information (e.g., name, contact information, address).	4.	The user presses the “Save Changes” button.	5.	The system saves the changes in the database.	6.	Notification: “Profile updated successfully!”
1.	The user navigates to the “Edit Profile” section.												
2.	The user navigates to the “Edit Profile” section.												
3.	The user updates their personal information (e.g., name, contact information, address).												
4.	The user presses the “Save Changes” button.												
5.	The system saves the changes in the database.												
6.	Notification: “Profile updated successfully!”												

Alternative Flows	1.1	The user submits incomplete or invalid information (e.g., invalid email or phone number).
		1.1.a. The system highlights the errors and prompts: “Please correct the highlighted fields.”
	4.1	The system encounters an error while saving the updates.
		4.1.a. The system redirects the user to the password recovery process.
	5.1	The system encounters an error during authentication.
		5.1.a. Notification: “System error. Unable to save changes. Please try again later.”
Quality Requirements	<p>The profile update process must be completed within 3 minutes.</p> <ul style="list-style-type: none"> <li>-The system must validate all fields before saving updates.</li> <li>-The user’s changes must reflect immediately after saving.</li> </ul>	

Case Description-04: Available medicines

Use Case	Available medicines
Goal	Allow receivers to view a list of available medications on the MedConnect platform.
Precondition	The user must be logged in as a receiver to access the list of available medicines.
Success End Condition	The system displays a list of medications available for donation.
Failed End Condition	Notification: “Unable to retrieve available medicines. Please try again later.”
Primary Actors	Receiver

Secondary Actors	Admin (to ensure the list is updated and accurate)									
Trigger	The receiver navigates to the “Available Medicines” section to browse medications.									
Description / Main  Success  Scenario	<table border="1"> <tr> <td data-bbox="612 745 684 842">1.</td> <td data-bbox="684 745 1418 842">The receiver clicks on the “Available Medicines” button in the dashboard.</td> </tr> <tr> <td data-bbox="612 842 684 938">2.</td> <td data-bbox="684 842 1418 938">The system retrieves the list of medicines from the database.</td> </tr> <tr> <td data-bbox="612 938 684 1034">3.</td> <td data-bbox="684 938 1418 1034">The system displays a categorized list of available medicines (e.g., by type, expiry date).</td> </tr> <tr> <td data-bbox="612 1034 684 1131">4.</td> <td data-bbox="684 1034 1418 1131">The receiver reviews the list and selects a medication for more details if needed.</td> </tr> </table>		1.	The receiver clicks on the “Available Medicines” button in the dashboard.	2.	The system retrieves the list of medicines from the database.	3.	The system displays a categorized list of available medicines (e.g., by type, expiry date).	4.	The receiver reviews the list and selects a medication for more details if needed.
1.	The receiver clicks on the “Available Medicines” button in the dashboard.									
2.	The system retrieves the list of medicines from the database.									
3.	The system displays a categorized list of available medicines (e.g., by type, expiry date).									
4.	The receiver reviews the list and selects a medication for more details if needed.									

Alternative Flows	1.1	The system finds no medications in the database.
		1.1.a.Notification: “No medicines are currently available for donation.”
	4.1	The system encounters an error while fetching the list.
		4.1.a.Notification: “System error. Unable to load medicines. Please try again later.”
	5.1	The user’s device loses internet connection during the process.
		5.1.a. Notification: “Network error. Please check your connection and try again.”
Quality Requirements	<p>The system must display the list of medicines within 2 seconds of the request.</p> <ul style="list-style-type: none"> <li>-The list should be searchable and filterable by category (e.g., type, expiry date).</li> <li>-The system must update the list dynamically as new medicines are added.</li> </ul>	

Case Description-05: Apply medicines

Use Case	Apply medicines
Goal	Allow receivers to request specific medications from the list of available medicines on the MedConnect platform.
Precondition	The receiver must be logged in and have access to the list of available medicines.
Success End Condition	Notification: “Your application for the medicine has been submitted successfully!”
Failed End Condition	Notification: “Failed to apply for the medicine. Please check the input details and try again.”
Primary Actors	Receiver

Secondary Actors	Admin(to review and approve the application)																
Trigger	The receiver selects a medication from the list of available medicines and clicks the “Apply” button.																
Description / Main Success Scenario	<table border="1"> <tr> <td>1.</td> <td>The receiver navigates to the “Available Medicines” section.</td> </tr> <tr> <td>2.</td> <td>The receiver selects a medication from the list and clicks the “Apply” button.</td> </tr> <tr> <td>3.</td> <td>The system displays an application form pre-filled with medication details.</td> </tr> <tr> <td>4.</td> <td>The receiver reviews the details and provides additional required information, if needed.</td> </tr> <tr> <td>5.</td> <td>The receiver submits the application by pressing the “Submit” button.</td> </tr> <tr> <td>6.</td> <td>The system validates the provided information.</td> </tr> <tr> <td>7.</td> <td>The system saves the application in the database and notifies the admin for approval.</td> </tr> <tr> <td>8.</td> <td>Notification: “Your application for the medicine has been submitted successfully!”</td> </tr> </table>	1.	The receiver navigates to the “Available Medicines” section.	2.	The receiver selects a medication from the list and clicks the “Apply” button.	3.	The system displays an application form pre-filled with medication details.	4.	The receiver reviews the details and provides additional required information, if needed.	5.	The receiver submits the application by pressing the “Submit” button.	6.	The system validates the provided information.	7.	The system saves the application in the database and notifies the admin for approval.	8.	Notification: “Your application for the medicine has been submitted successfully!”
1.	The receiver navigates to the “Available Medicines” section.																
2.	The receiver selects a medication from the list and clicks the “Apply” button.																
3.	The system displays an application form pre-filled with medication details.																
4.	The receiver reviews the details and provides additional required information, if needed.																
5.	The receiver submits the application by pressing the “Submit” button.																
6.	The system validates the provided information.																
7.	The system saves the application in the database and notifies the admin for approval.																
8.	Notification: “Your application for the medicine has been submitted successfully!”																

Alternative Flows	1.1	The receiver submits the application with incomplete details.
		1.1.a. The system prompts: "Please fill in all the required fields."
	4.1	The system encounters an error while saving the application.
		4.1.a. Notification: "System error. Unable to process your application. Please try again later."
	5.1	Another user applies for the medicine before the current application is processed.
		5.1.a. Notification: "The selected medicine is no longer available."
Quality Requirements	<p>The application process must be completed within 2 minutes.</p> <ul style="list-style-type: none"> <li>-The system must validate and save the application within 3 seconds of submission.</li> <li>-Notifications regarding the status of the application should be sent to the receiver and admin promptly.</li> </ul>	

#### Case Description-06: Apply donation

Use Case	Apply donation
Goal	Allow donors to submit an application to donate surplus medications through the MedConnect platform.
Precondition	The donor must be logged in and have the medications ready to donate.
Success End Condition	Notification: "Your donation application has been submitted successfully!"

Failed End Condition	Notification: “Failed to submit the donation application. Please try again.”
Primary Actors	Donor
Secondary Actors	Admin(to review and approve the donation application)
Trigger	The donor selects the “Apply Donation” option to start the donation process.

<p>Description / Main</p> <p>Success Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 683 613">1.</td> <td data-bbox="683 524 1417 613">The donor clicks on the “Apply Donation” button on the dashboard.</td> </tr> <tr> <td data-bbox="612 613 683 703">2.</td> <td data-bbox="683 613 1417 703">The system displays a form for the donor to fill in medication details (e.g., name, quantity, expiry date).</td> </tr> <tr> <td data-bbox="612 703 683 792">3.</td> <td data-bbox="683 703 1417 792">The donor fills in all required fields and presses the “Submit” button.</td> </tr> <tr> <td data-bbox="612 792 683 860">4.</td> <td data-bbox="683 792 1417 860">The system validates the entered details.</td> </tr> <tr> <td data-bbox="612 860 683 949">5.</td> <td data-bbox="683 860 1417 949">The system saves the application in the database and notifies the admin for review.</td> </tr> <tr> <td data-bbox="612 949 683 1039">6.</td> <td data-bbox="683 949 1417 1039">Notification: “Your donation application has been submitted successfully!”</td> </tr> </table>	1.	The donor clicks on the “Apply Donation” button on the dashboard.	2.	The system displays a form for the donor to fill in medication details (e.g., name, quantity, expiry date).	3.	The donor fills in all required fields and presses the “Submit” button.	4.	The system validates the entered details.	5.	The system saves the application in the database and notifies the admin for review.	6.	Notification: “Your donation application has been submitted successfully!”
1.	The donor clicks on the “Apply Donation” button on the dashboard.												
2.	The system displays a form for the donor to fill in medication details (e.g., name, quantity, expiry date).												
3.	The donor fills in all required fields and presses the “Submit” button.												
4.	The system validates the entered details.												
5.	The system saves the application in the database and notifies the admin for review.												
6.	Notification: “Your donation application has been submitted successfully!”												

Alternative Flows	1.1	The donor submits the application with missing or invalid information.
		1.1.a. The system highlights the errors and prompts: “Please complete all required fields with valid information.”
	4.1	The system encounters an error during the submission process.
		4.1.a Notification: “System error. Unable to process your application. Please try again later.”
	5.1	The donor tries to submit a donation for the same medicine multiple times.
		5.1.a. Notification: “This medicine donation has already been applied. Please check your donation list.”
Quality Requirements	<p>The donation application process should be completed within 3 minutes.</p> <ul style="list-style-type: none"> <li>-The system must validate the donation details within 5 seconds of submission.</li> <li>-Admins should be notified immediately upon successful application submission.</li> </ul>	

#### Case Description-07: Get notification

Use Case	Get notification
Goal	Allow users to receive updates and alerts regarding their activities, such as donation status, application approval, or system updates.
Precondition	The user must be logged in to the MedConnect platform and have pending notifications.
Success End Condition	The user successfully views all relevant notifications on their dashboard.

Failed End Condition	Notification: “Unable to retrieve notifications. Please try again later.”
Primary Actors	Donor, Receiver
Secondary Actors	Admin(to manage notification content when necessary)
Trigger	The user logs in and accesses the notification panel or receives an alert.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 683 577">1.</td> <td data-bbox="683 524 1417 577">The user logs into their MedConnect account.</td> </tr> <tr> <td data-bbox="612 577 683 676">2.</td> <td data-bbox="683 577 1417 676">The system checks for any pending notifications related to the user's activities.</td> </tr> <tr> <td data-bbox="612 676 683 775">3.</td> <td data-bbox="683 676 1417 775">The user navigates to the "Notifications" section or clicks on the notification alert icon.</td> </tr> <tr> <td data-bbox="612 775 683 873">4.</td> <td data-bbox="683 775 1417 873">The system retrieves and displays all relevant notifications (e.g., application approvals, donation updates).</td> </tr> <tr> <td data-bbox="612 873 683 972">5.</td> <td data-bbox="683 873 1417 972">The user reviews the notifications and marks them as read, if applicable.</td> </tr> </table>	1.	The user logs into their MedConnect account.	2.	The system checks for any pending notifications related to the user's activities.	3.	The user navigates to the "Notifications" section or clicks on the notification alert icon.	4.	The system retrieves and displays all relevant notifications (e.g., application approvals, donation updates).	5.	The user reviews the notifications and marks them as read, if applicable.
1.	The user logs into their MedConnect account.										
2.	The system checks for any pending notifications related to the user's activities.										
3.	The user navigates to the "Notifications" section or clicks on the notification alert icon.										
4.	The system retrieves and displays all relevant notifications (e.g., application approvals, donation updates).										
5.	The user reviews the notifications and marks them as read, if applicable.										

Alternative Flows	1.1	The system finds no pending notifications for the user.
		1.1.a.Notification: “You have no new notifications at the moment.”
	4.1	The system encounters an error while retrieving notifications.
		4.1.a Notification: “Unable to fetch notifications. Please try again later.”
	5.1	Notifications are delayed due to server issues.
		5.1.a. The system sends notifications once the issue is resolved, and the user is informed of the delay.
Quality Requirements	<p>Notifications must load within 2 seconds after the user accesses the notification panel.</p> <ul style="list-style-type: none"> <li>-Notifications should include clear, concise messages about user activities and system updates.</li> <li>-Users should have the option to mark notifications as read or clear all notifications.</li> </ul>	

Case Description-08: Search medicine

Use Case	Search medicine
Goal	Allow receivers to search for specific medicines available for donation on the MedConnect platform.
Precondition	The receiver must be logged in to access the search functionality.
Success End Condition	The system displays a list of medicines matching the receiver’s search criteria.
Failed End Condition	Notification: “No medicines found matching your search criteria. Please try again.”

Primary Actors	Receiver												
Secondary Actors	None												
Trigger	The receiver selects the “Search Medicine” option and enters search criteria.												
Description / Main Success Scenario	<table border="1"> <tr> <td>1.</td> <td>The receiver logs into their MedConnect account.</td> </tr> <tr> <td>2.</td> <td>The receiver navigates to the “Search Medicine” section.</td> </tr> <tr> <td>3.</td> <td>The system displays a search bar with filters (e.g., medicine name, category, expiration date).</td> </tr> <tr> <td>4.</td> <td>The receiver enters search criteria (e.g., name or category) and presses the “Search” button.</td> </tr> <tr> <td>5.</td> <td>The system retrieves matching medicines from the database.</td> </tr> <tr> <td>6.</td> <td>The system displays the list of medicines that match the search criteria.</td> </tr> </table>	1.	The receiver logs into their MedConnect account.	2.	The receiver navigates to the “Search Medicine” section.	3.	The system displays a search bar with filters (e.g., medicine name, category, expiration date).	4.	The receiver enters search criteria (e.g., name or category) and presses the “Search” button.	5.	The system retrieves matching medicines from the database.	6.	The system displays the list of medicines that match the search criteria.
1.	The receiver logs into their MedConnect account.												
2.	The receiver navigates to the “Search Medicine” section.												
3.	The system displays a search bar with filters (e.g., medicine name, category, expiration date).												
4.	The receiver enters search criteria (e.g., name or category) and presses the “Search” button.												
5.	The system retrieves matching medicines from the database.												
6.	The system displays the list of medicines that match the search criteria.												

Alternative Flows	1.1	The system finds no medicines that match the receiver's search criteria.
		1.1.a.Notification: "No medicines found matching your search criteria. Please try again."
	4.1	The system encounters an error while retrieving search results.
		4.1.a Notification: "System error. Unable to process your search. Please try again later."
	5.1	The receiver submits the search with incomplete or invalid input (e.g., empty search fields).
		5.1.a. Notification: "Please provide valid search criteria to proceed."
	Quality Requirements	<p>The search results must load within 3 seconds after the query is submitted.</p> <ul style="list-style-type: none"> <li>-The system must allow filtering by various criteria, such as medicine name, category, and expiration date.</li> <li>-Search results must be accurate and sorted for easy navigation by the user.</li> </ul>

Case Description-09: Manage health tips

Use Case	Manage health tips
Goal	Allow administrators to create, edit, or delete health tips to provide users with useful health-related information on the MedConnect platform.
Precondition	The admin must be logged in to access the "Manage Health Tips" functionality.

Success End Condition	Health tips are successfully added, updated, or removed from the system, and changes are reflected for all users.
Failed End Condition	Notification: “Failed to manage health tips. Please try again.”
Primary Actors	Admin
Secondary Actors	None
Trigger	The admin selects the “Manage Health Tips” option from the dashboard.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 683 577">1.</td> <td data-bbox="683 524 1417 577">The admin logs into their MedConnect account..</td> </tr> <tr> <td data-bbox="612 577 683 631">2.</td> <td data-bbox="683 577 1417 631">The admin navigates to the “Manage Health Tips” section.</td> </tr> <tr> <td data-bbox="612 631 683 734">3.</td> <td data-bbox="683 631 1417 734">The system displays a list of existing health tips and provides options to add, edit, or delete health tips.</td> </tr> <tr> <td data-bbox="612 734 683 788">4.</td> <td data-bbox="683 734 1417 788">The system processes the request and updates the database.</td> </tr> <tr> <td data-bbox="612 788 683 891">5.</td> <td data-bbox="683 788 1417 891">Notification: “Health tips have been successfully managed!”</td> </tr> </table>	1.	The admin logs into their MedConnect account..	2.	The admin navigates to the “Manage Health Tips” section.	3.	The system displays a list of existing health tips and provides options to add, edit, or delete health tips.	4.	The system processes the request and updates the database.	5.	Notification: “Health tips have been successfully managed!”
1.	The admin logs into their MedConnect account..										
2.	The admin navigates to the “Manage Health Tips” section.										
3.	The system displays a list of existing health tips and provides options to add, edit, or delete health tips.										
4.	The system processes the request and updates the database.										
5.	Notification: “Health tips have been successfully managed!”										

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 618">1.1</td> <td data-bbox="715 521 1422 618">The admin enters incomplete or invalid information while adding or editing a health tip.</td> </tr> <tr> <td data-bbox="612 618 715 714"></td> <td data-bbox="715 618 1422 714">1.1.a. The system highlights errors and prompts: “Please fill in all required fields with valid information.”</td> </tr> <tr> <td data-bbox="612 714 715 810">4.1</td> <td data-bbox="715 714 1422 810">The system encounters an error while processing the request.</td> </tr> <tr> <td data-bbox="612 810 715 907"></td> <td data-bbox="715 810 1422 907">4.1.a Notification: “System error. Unable to manage health tips. Please try again later.”</td> </tr> <tr> <td data-bbox="612 907 715 1003">5.1</td> <td data-bbox="715 907 1422 1003">A non-admin user attempts to access the “Manage Health Tips” functionality.</td> </tr> <tr> <td data-bbox="612 1003 715 1099"></td> <td data-bbox="715 1003 1422 1099">5.1.a. Notification: “Access denied. Only admins can manage health tips.”</td> </tr> </table>	1.1	The admin enters incomplete or invalid information while adding or editing a health tip.		1.1.a. The system highlights errors and prompts: “Please fill in all required fields with valid information.”	4.1	The system encounters an error while processing the request.		4.1.a Notification: “System error. Unable to manage health tips. Please try again later.”	5.1	A non-admin user attempts to access the “Manage Health Tips” functionality.		5.1.a. Notification: “Access denied. Only admins can manage health tips.”
1.1	The admin enters incomplete or invalid information while adding or editing a health tip.												
	1.1.a. The system highlights errors and prompts: “Please fill in all required fields with valid information.”												
4.1	The system encounters an error while processing the request.												
	4.1.a Notification: “System error. Unable to manage health tips. Please try again later.”												
5.1	A non-admin user attempts to access the “Manage Health Tips” functionality.												
	5.1.a. Notification: “Access denied. Only admins can manage health tips.”												
Quality Requirements	<p>Health tip changes must be reflected on the platform immediately after submission.</p> <ul style="list-style-type: none"> <li>-The system must validate all inputs to ensure quality and relevance of the content.</li> <li>-The system must allow the admin to manage health tips efficiently within 2 minutes per action.</li> </ul>												

Case Description-10: Reset password

Use Case	Reset password
Goal	Allow users to reset their password securely in case they forget their current password or wish to update it.
Precondition	The user must have a registered account on the MedConnect platform and access to the email address or phone number associated with the account.

Success End Condition	The user's password is successfully reset, and the new password is updated in the system.
Failed End Condition	Notification: "Failed to reset the password. Please try again."
Primary Actors	Donor, Receiver
Secondary Actors	Admin (for assistance in special cases)
Trigger	The user selects the "Reset Password" option on the login page or profile settings.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 521 684 580">1.</td> <td data-bbox="684 521 1417 580">The user selects the “Reset Password” option.</td> </tr> <tr> <td data-bbox="612 580 684 678">2.</td> <td data-bbox="684 580 1417 678">The system prompts the user to enter their registered email address or phone number.</td> </tr> <tr> <td data-bbox="612 678 684 777">3.</td> <td data-bbox="684 678 1417 777">The user provides the required information and submits the request.</td> </tr> <tr> <td data-bbox="612 777 684 835">4.</td> <td data-bbox="684 777 1417 835">The system validates the provided information.</td> </tr> <tr> <td data-bbox="612 835 684 965">5.</td> <td data-bbox="684 835 1417 965">The system sends a password reset link or verification code to the user’s registered email address or phone number.</td> </tr> <tr> <td data-bbox="612 965 684 1064">6.</td> <td data-bbox="684 965 1417 1064">The user clicks the link or enters the verification code to access the password reset form.</td> </tr> <tr> <td data-bbox="612 1064 684 1162">7.</td> <td data-bbox="684 1064 1417 1162">The user enters a new password, confirms it, and submits the form.</td> </tr> <tr> <td data-bbox="612 1162 684 1261">8.</td> <td data-bbox="684 1162 1417 1261">The system validates the new password and updates it in the database.</td> </tr> <tr> <td data-bbox="612 1261 684 1359">9.</td> <td data-bbox="684 1261 1417 1359">The system validates the new password and updates it in the database.</td> </tr> </table>	1.	The user selects the “Reset Password” option.	2.	The system prompts the user to enter their registered email address or phone number.	3.	The user provides the required information and submits the request.	4.	The system validates the provided information.	5.	The system sends a password reset link or verification code to the user’s registered email address or phone number.	6.	The user clicks the link or enters the verification code to access the password reset form.	7.	The user enters a new password, confirms it, and submits the form.	8.	The system validates the new password and updates it in the database.	9.	The system validates the new password and updates it in the database.
1.	The user selects the “Reset Password” option.																		
2.	The system prompts the user to enter their registered email address or phone number.																		
3.	The user provides the required information and submits the request.																		
4.	The system validates the provided information.																		
5.	The system sends a password reset link or verification code to the user’s registered email address or phone number.																		
6.	The user clicks the link or enters the verification code to access the password reset form.																		
7.	The user enters a new password, confirms it, and submits the form.																		
8.	The system validates the new password and updates it in the database.																		
9.	The system validates the new password and updates it in the database.																		

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 618">1.1</td> <td data-bbox="715 521 1422 618">The user enters an email or phone number not registered in the system.</td> </tr> <tr> <td data-bbox="612 618 715 714"></td> <td data-bbox="715 618 1422 714">1.1.a.Notification: “The provided email or phone number does not match our records.”</td> </tr> <tr> <td data-bbox="612 714 715 810">4.1</td> <td data-bbox="715 714 1422 810">The user attempts to use an expired password reset link or verification code.</td> </tr> <tr> <td data-bbox="612 810 715 907"></td> <td data-bbox="715 810 1422 907">4.1.a Notification: “The password reset link or code has expired. Please request a new one.”</td> </tr> <tr> <td data-bbox="612 907 715 1003">5.1</td> <td data-bbox="715 907 1422 1003">The user enters a password that does not meet the platform’s security requirements.</td> </tr> <tr> <td data-bbox="612 1003 715 1099"></td> <td data-bbox="715 1003 1422 1099">5.1.a. Notification: “System error. Unable to reset your password. Please try again later.”</td> </tr> </table>	1.1	The user enters an email or phone number not registered in the system.		1.1.a.Notification: “The provided email or phone number does not match our records.”	4.1	The user attempts to use an expired password reset link or verification code.		4.1.a Notification: “The password reset link or code has expired. Please request a new one.”	5.1	The user enters a password that does not meet the platform’s security requirements.		5.1.a. Notification: “System error. Unable to reset your password. Please try again later.”
1.1	The user enters an email or phone number not registered in the system.												
	1.1.a.Notification: “The provided email or phone number does not match our records.”												
4.1	The user attempts to use an expired password reset link or verification code.												
	4.1.a Notification: “The password reset link or code has expired. Please request a new one.”												
5.1	The user enters a password that does not meet the platform’s security requirements.												
	5.1.a. Notification: “System error. Unable to reset your password. Please try again later.”												
Quality Requirements	<p>The system must send the password reset link or code within 1 minute of the request.</p> <ul style="list-style-type: none"> <li>-Password validation must ensure compliance with security standards (e.g., strength requirements).</li> <li>-The password reset process should complete within 5 minutes for users.</li> </ul>												

Case Description-11: FAQ

Use Case	FAQ
Goal	Provide users with quick answers to common questions regarding the MedConnect platform’s features, processes, and policies.

Precondition	The user must be logged into the MedConnect platform or accessing the FAQ section on the public site.
Success End Condition	The user successfully views answers to frequently asked questions and resolves their query.
Failed End Condition	Notification: “Unable to retrieve FAQ content. Please try again later.”
Primary Actors	Donor, Receiver
Secondary Actors	Admin(for updating and managing FAQ content)
Trigger	The user selects the “FAQ” option from the menu.

<p>Description / Main</p> <p>Success Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 683 613">1.</td> <td data-bbox="683 524 1417 613">The user navigates to the “FAQ” section via the dashboard or menu.</td> </tr> <tr> <td data-bbox="612 613 683 703">2.</td> <td data-bbox="683 613 1417 703">The system displays a categorized list of frequently asked questions.</td> </tr> <tr> <td data-bbox="612 703 683 792">3.</td> <td data-bbox="683 703 1417 792">The user selects a question from the list to view its detailed answer.</td> </tr> <tr> <td data-bbox="612 792 683 882">4.</td> <td data-bbox="683 792 1417 882">The system retrieves the answer and displays it on the screen.</td> </tr> <tr> <td data-bbox="612 882 683 949">5.</td> <td data-bbox="683 882 1417 949">The user reviews the answer and resolves their query.</td> </tr> </table>	1.	The user navigates to the “FAQ” section via the dashboard or menu.	2.	The system displays a categorized list of frequently asked questions.	3.	The user selects a question from the list to view its detailed answer.	4.	The system retrieves the answer and displays it on the screen.	5.	The user reviews the answer and resolves their query.
1.	The user navigates to the “FAQ” section via the dashboard or menu.										
2.	The system displays a categorized list of frequently asked questions.										
3.	The user selects a question from the list to view its detailed answer.										
4.	The system retrieves the answer and displays it on the screen.										
5.	The user reviews the answer and resolves their query.										

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 618">1.1</td> <td data-bbox="715 521 1422 618">The user does not find an answer to their query in the FAQ section.</td> </tr> <tr> <td data-bbox="612 618 715 714"></td> <td data-bbox="715 618 1422 714">1.1.a. Notification: “If you didn’t find your answer, please contact support for assistance.”</td> </tr> <tr> <td data-bbox="612 714 715 810">4.1</td> <td data-bbox="715 714 1422 810">The system fails to load the FAQ section due to a technical error.</td> </tr> <tr> <td data-bbox="612 810 715 907"></td> <td data-bbox="715 810 1422 907">4.1.a Notification: “System error. Unable to load FAQs. Please try again later.”</td> </tr> </table>	1.1	The user does not find an answer to their query in the FAQ section.		1.1.a. Notification: “If you didn’t find your answer, please contact support for assistance.”	4.1	The system fails to load the FAQ section due to a technical error.		4.1.a Notification: “System error. Unable to load FAQs. Please try again later.”
1.1	The user does not find an answer to their query in the FAQ section.								
	1.1.a. Notification: “If you didn’t find your answer, please contact support for assistance.”								
4.1	The system fails to load the FAQ section due to a technical error.								
	4.1.a Notification: “System error. Unable to load FAQs. Please try again later.”								
Quality Requirements	<p>The FAQ content must load within 2 seconds.</p> <ul style="list-style-type: none"> <li>-FAQs must be organized into categories for easy navigation.</li> <li>-Users must be able to access the FAQ section from any device (desktop or mobile).</li> </ul>								

#### Case Description-12: Contact admin

Use Case	Contact admin
Goal	Enable users to directly communicate with the admin team for assistance or to resolve issues related to the MedConnect platform.
Precondition	The user must be logged in to access the “Contact Admin” functionality.

Success End Condition	The user successfully submits their message, and the system confirms that the admin team has received it.
Failed End Condition	Notification: “Unable to send your message. Please try again later.”
Primary Actors	Receiver, Donor
Secondary Actors	Admin(as the recipient of the user’s message)
Trigger	The user selects the “Contact Us” option from the menu or platform’s help or support section.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 684 580">1.</td> <td data-bbox="684 524 1417 580">The user logs into their MedConnect account.</td> </tr> <tr> <td data-bbox="612 580 684 636">2.</td> <td data-bbox="684 580 1417 636">The user navigates to the “Contact Us” section.</td> </tr> <tr> <td data-bbox="612 636 684 736">3.</td> <td data-bbox="684 636 1417 736">The system displays a form where the user can enter their query or message.</td> </tr> <tr> <td data-bbox="612 736 684 837">4.</td> <td data-bbox="684 736 1417 837">The user fills in the required details (e.g., subject and message) and submits the form.</td> </tr> <tr> <td data-bbox="612 837 684 938">5.</td> <td data-bbox="684 837 1417 938">The system validates the input to ensure all mandatory fields are completed.</td> </tr> <tr> <td data-bbox="612 938 684 1039">6.</td> <td data-bbox="684 938 1417 1039">The system sends the message to the admin and notifies the user: “Your message has been sent successfully.”</td> </tr> <tr> <td data-bbox="612 1039 684 1140">7.</td> <td data-bbox="684 1039 1417 1140">The admin receives the message and responds to the user through the appropriate communication channel.</td> </tr> </table>	1.	The user logs into their MedConnect account.	2.	The user navigates to the “Contact Us” section.	3.	The system displays a form where the user can enter their query or message.	4.	The user fills in the required details (e.g., subject and message) and submits the form.	5.	The system validates the input to ensure all mandatory fields are completed.	6.	The system sends the message to the admin and notifies the user: “Your message has been sent successfully.”	7.	The admin receives the message and responds to the user through the appropriate communication channel.
1.	The user logs into their MedConnect account.														
2.	The user navigates to the “Contact Us” section.														
3.	The system displays a form where the user can enter their query or message.														
4.	The user fills in the required details (e.g., subject and message) and submits the form.														
5.	The system validates the input to ensure all mandatory fields are completed.														
6.	The system sends the message to the admin and notifies the user: “Your message has been sent successfully.”														
7.	The admin receives the message and responds to the user through the appropriate communication channel.														

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 618">1.1</td> <td data-bbox="715 521 1422 618">The user submits the form without completing all required fields.</td> </tr> <tr> <td data-bbox="612 618 715 714"></td> <td data-bbox="715 618 1422 714">1.1.a. The system prompts: “Please fill in all mandatory fields before submitting your message.”</td> </tr> <tr> <td data-bbox="612 714 715 810">4.1</td> <td data-bbox="715 714 1422 810">The system encounters an error while sending the message.</td> </tr> <tr> <td data-bbox="612 810 715 907"></td> <td data-bbox="715 810 1422 907">4.1.a Notification: “System error. Unable to send your message. Please try again later.”</td> </tr> </table>	1.1	The user submits the form without completing all required fields.		1.1.a. The system prompts: “Please fill in all mandatory fields before submitting your message.”	4.1	The system encounters an error while sending the message.		4.1.a Notification: “System error. Unable to send your message. Please try again later.”
1.1	The user submits the form without completing all required fields.								
	1.1.a. The system prompts: “Please fill in all mandatory fields before submitting your message.”								
4.1	The system encounters an error while sending the message.								
	4.1.a Notification: “System error. Unable to send your message. Please try again later.”								
Quality Requirements	<p>The message submission process should take no more than 1 minute.</p> <ul style="list-style-type: none"> <li>-Messages must be delivered to the admin instantly after submission.</li> <li>-Users must receive confirmation of message delivery within 2 seconds.</li> </ul>								

#### Case Description-13: Manage Medicines

Use Case	Manage Medicines
Goal	Allow admin to oversee, add, update, and remove medicine records on the MedConnect platform to ensure accurate and up-to-date information is available for donors and recipients.

Precondition	The admin must be logged in to the system with the appropriate privileges to access the “Manage Medicines” functionality.
Success End Condition	The medicine records are successfully added, updated, or removed, and the changes are reflected on the platform for users.
Failed End Condition	Notification: “Failed to manage medicines. Please try again later.”
Primary Actors	Admin
Secondary Actors	None
Trigger	The admin selects the “Manage Medicines” option from the dashboard.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 521 684 584">1.</td> <td data-bbox="684 521 1417 584">The admin logs into their MedConnect account.</td> </tr> <tr> <td data-bbox="612 584 684 647">2.</td> <td data-bbox="684 584 1417 647">The admin navigates to the “Medicines” section.</td> </tr> <tr> <td data-bbox="612 647 684 741">3.</td> <td data-bbox="684 647 1417 741">The system displays a list of existing medicines with options to add, update, or delete records.</td> </tr> <tr> <td data-bbox="612 741 684 1137">4.</td> <td data-bbox="684 741 1417 1137"> <p>The admin selects an action:</p> <p style="padding-left: 40px;">Add Medicine: The admin enters new medicine details and submits the form.</p> <p style="padding-left: 40px;">Update Medicine: The admin selects an existing medicine, edits the details, and saves the changes.</p> <p style="padding-left: 40px;">Delete Medicine: The admin selects a medicine to delete and confirms the action.</p> </td> </tr> <tr> <td data-bbox="612 1137 684 1232">5.</td> <td data-bbox="684 1137 1417 1232">The system processes the admin’s request and updates the database.</td> </tr> <tr> <td data-bbox="612 1232 684 1326">6.</td> <td data-bbox="684 1232 1417 1326">Notification: “Medicines have been successfully managed.”</td> </tr> </table>	1.	The admin logs into their MedConnect account.	2.	The admin navigates to the “Medicines” section.	3.	The system displays a list of existing medicines with options to add, update, or delete records.	4.	<p>The admin selects an action:</p> <p style="padding-left: 40px;">Add Medicine: The admin enters new medicine details and submits the form.</p> <p style="padding-left: 40px;">Update Medicine: The admin selects an existing medicine, edits the details, and saves the changes.</p> <p style="padding-left: 40px;">Delete Medicine: The admin selects a medicine to delete and confirms the action.</p>	5.	The system processes the admin’s request and updates the database.	6.	Notification: “Medicines have been successfully managed.”
1.	The admin logs into their MedConnect account.												
2.	The admin navigates to the “Medicines” section.												
3.	The system displays a list of existing medicines with options to add, update, or delete records.												
4.	<p>The admin selects an action:</p> <p style="padding-left: 40px;">Add Medicine: The admin enters new medicine details and submits the form.</p> <p style="padding-left: 40px;">Update Medicine: The admin selects an existing medicine, edits the details, and saves the changes.</p> <p style="padding-left: 40px;">Delete Medicine: The admin selects a medicine to delete and confirms the action.</p>												
5.	The system processes the admin’s request and updates the database.												
6.	Notification: “Medicines have been successfully managed.”												

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 616">1.1</td> <td data-bbox="715 521 1422 616">The admin submits incomplete or invalid details while adding or updating a medicine.</td> </tr> <tr> <td data-bbox="612 616 715 710"></td> <td data-bbox="715 616 1422 710">1.1.a. Notification: “Please complete all required fields with valid information.”</td> </tr> <tr> <td data-bbox="612 710 715 804">4.1</td> <td data-bbox="715 710 1422 804">The system encounters an error while processing the admin’s request.</td> </tr> <tr> <td data-bbox="612 804 715 898"></td> <td data-bbox="715 804 1422 898">4.1.a Notification: “System error. Unable to manage medicines. Please try again later.”</td> </tr> </table>	1.1	The admin submits incomplete or invalid details while adding or updating a medicine.		1.1.a. Notification: “Please complete all required fields with valid information.”	4.1	The system encounters an error while processing the admin’s request.		4.1.a Notification: “System error. Unable to manage medicines. Please try again later.”
1.1	The admin submits incomplete or invalid details while adding or updating a medicine.								
	1.1.a. Notification: “Please complete all required fields with valid information.”								
4.1	The system encounters an error while processing the admin’s request.								
	4.1.a Notification: “System error. Unable to manage medicines. Please try again later.”								
Quality Requirements	<p>Updates to medicine records must be reflected on the platform within 2 seconds of submission.</p> <p style="padding-left: 40px;">Input validation must ensure the integrity and accuracy of medicine information.</p> <p style="padding-left: 40px;">The system must allow admins to manage medicine records efficiently and without errors.</p>								

Case Description-14: Add photo

Use Case	Add photo
----------	-----------

Goal	Allow admin to upload photos for use in the gallery or relevant sections of the MedConnect platform to enhance visual appeal and communicate effectively with users.
Precondition	The admin must be logged into the MedConnect platform with the necessary privileges to access the “Add Photos” feature.
Success End Condition	Photos are successfully uploaded, stored in the system, and made available in the gallery or designated sections of the platform.
Failed End Condition	Notification: “Photo upload failed. Please try again.”
Primary Actors	Admin
Secondary Actors	None
Trigger	The admin selects the “Add Photos” option from the dashboard or gallery section.

Description / Main  Success  Scenario	1.	The admin logs into their MedConnect account.
	2.	The admin navigates to the “Add Photo” section.
	3.	The system displays an upload interface, allowing the admin to select photos from their device.
	4.	The admin selects one or more photos and clicks the “Upload” button.
	5.	The system validates the file format and size of the selected photos.
	6.	The system uploads the photos to the server and updates the gallery or the relevant section.
	7.	Notification: “Photos have been successfully added.”

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 616">1.1</td> <td data-bbox="715 521 1422 616">The admin selects files that do not meet the required format (e.g., JPG, PNG) or exceed the size limit.</td> </tr> <tr> <td data-bbox="612 616 715 748"></td> <td data-bbox="715 616 1422 748">1.1.a.Notification: “Invalid file format or size. Please upload files in JPG or PNG format and ensure they are under the size limit.”</td> </tr> <tr> <td data-bbox="612 748 715 842">4.1</td> <td data-bbox="715 748 1422 842">The system encounters an error while uploading the photos.</td> </tr> <tr> <td data-bbox="612 842 715 943"></td> <td data-bbox="715 842 1422 943">4.1.a Notification: “System error. Unable to upload photos. Please try again later.”</td> </tr> </table>	1.1	The admin selects files that do not meet the required format (e.g., JPG, PNG) or exceed the size limit.		1.1.a.Notification: “Invalid file format or size. Please upload files in JPG or PNG format and ensure they are under the size limit.”	4.1	The system encounters an error while uploading the photos.		4.1.a Notification: “System error. Unable to upload photos. Please try again later.”
1.1	The admin selects files that do not meet the required format (e.g., JPG, PNG) or exceed the size limit.								
	1.1.a.Notification: “Invalid file format or size. Please upload files in JPG or PNG format and ensure they are under the size limit.”								
4.1	The system encounters an error while uploading the photos.								
	4.1.a Notification: “System error. Unable to upload photos. Please try again later.”								
Quality Requirements	<p>Photos must be uploaded and available on the platform within 5 seconds of submission.</p> <ul style="list-style-type: none"> <li>-The system must validate file size and format before uploading to prevent errors.</li> <li>-The upload process must handle multiple photos simultaneously without failure.</li> </ul>								

Case Description-15: Manage applications

Use Case	Manage applications
----------	---------------------

Goal	Allow admin to review, approve, or reject donation and medicine request applications submitted by donors and recipients on the MedConnect platform.
Precondition	The admin must be logged into the MedConnect platform with the appropriate permissions to access the “Manage Applications” feature.
Success End Condition	Applications are successfully reviewed, and decisions (approval or rejection) are recorded and communicated to the respective users.
Failed End Condition	Notification: “Failed to process the application. Please try again later.”
Primary Actors	Admin
Secondary Actors	Donor, Receiver
Trigger	The admin selects the “Manage Applications” option from the dashboard.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 521 684 577">1.</td> <td data-bbox="684 521 1415 577">The admin logs into their MedConnect account.</td> </tr> <tr> <td data-bbox="612 577 684 678">2.</td> <td data-bbox="684 577 1415 678">The admin navigates to the “Manage Applications” section.</td> </tr> <tr> <td data-bbox="612 678 684 779">3.</td> <td data-bbox="684 678 1415 779">The system displays a list of pending applications for donations and medicine requests.</td> </tr> <tr> <td data-bbox="612 779 684 880">4.</td> <td data-bbox="684 779 1415 880">The admin selects an application from the list to review.</td> </tr> <tr> <td data-bbox="612 880 684 981">5.</td> <td data-bbox="684 880 1415 981">The system displays the details of the selected application.</td> </tr> <tr> <td data-bbox="612 981 684 1081">6.</td> <td data-bbox="684 981 1415 1081">The admin decides to either approve or reject the application and submits the decision.</td> </tr> <tr> <td data-bbox="612 1081 684 1182">7.</td> <td data-bbox="684 1081 1415 1182">The system records the decision and notifies the applicant (donor or receiver).</td> </tr> </table>	1.	The admin logs into their MedConnect account.	2.	The admin navigates to the “Manage Applications” section.	3.	The system displays a list of pending applications for donations and medicine requests.	4.	The admin selects an application from the list to review.	5.	The system displays the details of the selected application.	6.	The admin decides to either approve or reject the application and submits the decision.	7.	The system records the decision and notifies the applicant (donor or receiver).
1.	The admin logs into their MedConnect account.														
2.	The admin navigates to the “Manage Applications” section.														
3.	The system displays a list of pending applications for donations and medicine requests.														
4.	The admin selects an application from the list to review.														
5.	The system displays the details of the selected application.														
6.	The admin decides to either approve or reject the application and submits the decision.														
7.	The system records the decision and notifies the applicant (donor or receiver).														

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 616">1.1</td> <td data-bbox="715 521 1422 616">The admin finds missing or invalid information in the application</td> </tr> <tr> <td data-bbox="612 616 715 710"></td> <td data-bbox="715 616 1422 710">1.1.a.The admin flags the application and sends it back to the applicant for correction.</td> </tr> <tr> <td data-bbox="612 710 715 844">4.1</td> <td data-bbox="715 710 1422 844">Notification to the applicant: “Your application is incomplete. Please update the required details and resubmit.”</td> </tr> <tr> <td data-bbox="612 844 715 940"></td> <td data-bbox="715 844 1422 940">4.1.a The system encounters an error while processing the application.</td> </tr> <tr> <td data-bbox="612 940 715 1037"></td> <td data-bbox="715 940 1422 1037">Notification: “System error. Unable to process the application. Please try again later.”</td> </tr> </table>	1.1	The admin finds missing or invalid information in the application		1.1.a.The admin flags the application and sends it back to the applicant for correction.	4.1	Notification to the applicant: “Your application is incomplete. Please update the required details and resubmit.”		4.1.a The system encounters an error while processing the application.		Notification: “System error. Unable to process the application. Please try again later.”
1.1	The admin finds missing or invalid information in the application										
	1.1.a.The admin flags the application and sends it back to the applicant for correction.										
4.1	Notification to the applicant: “Your application is incomplete. Please update the required details and resubmit.”										
	4.1.a The system encounters an error while processing the application.										
	Notification: “System error. Unable to process the application. Please try again later.”										
Quality Requirements	<p>The application review process must take no more than 3 minutes per application.</p> <ul style="list-style-type: none"> <li>-Notifications regarding application decisions must be sent to the respective users within 1 second of the admin’s action.</li> <li>-The system must log all decisions for future auditing purposes.</li> </ul>										

Use Case	View lists
Goal	Allow admin to view donor and receiver list.
Precondition	The admin must be logged into the MedConnect platform with the appropriate permissions to access the “View lists” feature.
Success End Condition	The selected list (e.g., medicines, applications, or health tips) is successfully displayed on the screen.
Failed End Condition	Notification: “Failed to load the list. Please try again later.”
Primary Actors	Admin
Secondary Actors	Donor, Receiver
Trigger	The admin selects the “Donor List” and “Receiver list” option from the dashboard.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 684 580">1.</td> <td data-bbox="684 524 1415 580">The user logs into their MedConnect account.</td> </tr> <tr> <td data-bbox="612 580 684 636">2.</td> <td data-bbox="684 580 1415 636">The admin navigates to the “View Lists” section.</td> </tr> <tr> <td data-bbox="612 636 684 770">3.</td> <td data-bbox="684 636 1415 770">The system displays available categories of lists (e.g., available medicines, pending applications, approved donations).</td> </tr> <tr> <td data-bbox="612 770 684 882">4.</td> <td data-bbox="684 770 1415 882">The user selects a specific category to view.</td> </tr> <tr> <td data-bbox="612 882 684 983">5.</td> <td data-bbox="684 882 1415 983">The system retrieves and displays the selected list, including relevant details.</td> </tr> <tr> <td data-bbox="612 983 684 1039">6.</td> <td data-bbox="684 983 1415 1039">The user reviews the displayed information.</td> </tr> </table>	1.	The user logs into their MedConnect account.	2.	The admin navigates to the “View Lists” section.	3.	The system displays available categories of lists (e.g., available medicines, pending applications, approved donations).	4.	The user selects a specific category to view.	5.	The system retrieves and displays the selected list, including relevant details.	6.	The user reviews the displayed information.
1.	The user logs into their MedConnect account.												
2.	The admin navigates to the “View Lists” section.												
3.	The system displays available categories of lists (e.g., available medicines, pending applications, approved donations).												
4.	The user selects a specific category to view.												
5.	The system retrieves and displays the selected list, including relevant details.												
6.	The user reviews the displayed information.												

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 521 715 618">1.1</td> <td data-bbox="715 521 1417 618">The system finds no data for the selected category (e.g., no medicines available).</td> </tr> <tr> <td data-bbox="612 618 715 678"></td> <td data-bbox="715 618 1417 678">1.1.a.Notification: “No items found in this category.”</td> </tr> <tr> <td data-bbox="612 678 715 736">4.1</td> <td data-bbox="715 678 1417 736">The system encounters an error while retrieving the list.</td> </tr> <tr> <td data-bbox="612 736 715 831"></td> <td data-bbox="715 736 1417 831">4.1.a Notification: “System error. Unable to load the list. Please try again later.”</td> </tr> <tr> <td data-bbox="612 831 715 927"></td> <td data-bbox="715 831 1417 927">Notification: “System error. Unable to process the application. Please try again later.”</td> </tr> </table>	1.1	The system finds no data for the selected category (e.g., no medicines available).		1.1.a.Notification: “No items found in this category.”	4.1	The system encounters an error while retrieving the list.		4.1.a Notification: “System error. Unable to load the list. Please try again later.”		Notification: “System error. Unable to process the application. Please try again later.”
1.1	The system finds no data for the selected category (e.g., no medicines available).										
	1.1.a.Notification: “No items found in this category.”										
4.1	The system encounters an error while retrieving the list.										
	4.1.a Notification: “System error. Unable to load the list. Please try again later.”										
	Notification: “System error. Unable to process the application. Please try again later.”										
Quality Requirements	<p>Lists must load and display within 2 seconds of user selection.</p> <ul style="list-style-type: none"> <li>-Data presented in the lists must be accurate and updated in real time.</li> <li>-Lists should be presented in a user-friendly, searchable, and filterable format.</li> </ul>										

Use Case	Logout
Goal	Allow users to securely end their session on the MedConnect platform and ensure that no unauthorized access to their account occurs after logout.
Precondition	The user must be logged into the MedConnect platform.
Success End Condition	The user is successfully logged out, and their session is securely terminated.
Failed End Condition	Notification: “Failed to log out. Please try again later.”
Primary Actors	Donor, Receiver, Admin
Secondary Actors	None
Trigger	The user selects the “Logout” option from the menu or dashboard.

<p>Description / Main</p> <p>Success</p> <p>Scenario</p>	<table border="1"> <tr> <td data-bbox="612 524 684 584">1.</td> <td data-bbox="684 524 1417 584">The user logs into their MedConnect account.</td> </tr> <tr> <td data-bbox="612 584 684 645">2.</td> <td data-bbox="684 584 1417 645">The user navigates to the “Logout” section.</td> </tr> <tr> <td data-bbox="612 645 684 741">3.</td> <td data-bbox="684 645 1417 741">The system prompts the user to confirm their intention to log out.</td> </tr> <tr> <td data-bbox="612 741 684 857">4.</td> <td data-bbox="684 741 1417 857">The user confirms the logout action.</td> </tr> <tr> <td data-bbox="612 857 684 954">5.</td> <td data-bbox="684 857 1417 954">The system terminates the user’s session and clears all session-related data.</td> </tr> <tr> <td data-bbox="612 954 684 1014">6.</td> <td data-bbox="684 954 1417 1014">The user is redirected to the login page.</td> </tr> <tr> <td data-bbox="612 1014 684 1072">7.</td> <td data-bbox="684 1014 1417 1072">Notification: “You have been successfully logged out.”</td> </tr> </table>	1.	The user logs into their MedConnect account.	2.	The user navigates to the “Logout” section.	3.	The system prompts the user to confirm their intention to log out.	4.	The user confirms the logout action.	5.	The system terminates the user’s session and clears all session-related data.	6.	The user is redirected to the login page.	7.	Notification: “You have been successfully logged out.”
1.	The user logs into their MedConnect account.														
2.	The user navigates to the “Logout” section.														
3.	The system prompts the user to confirm their intention to log out.														
4.	The user confirms the logout action.														
5.	The system terminates the user’s session and clears all session-related data.														
6.	The user is redirected to the login page.														
7.	Notification: “You have been successfully logged out.”														

Alternative Flows	<table border="1"> <tr> <td data-bbox="612 524 715 618">1.1</td> <td data-bbox="715 524 1422 618">The system encounters an error while processing the logout request.</td> </tr> <tr> <td data-bbox="612 618 715 712"></td> <td data-bbox="715 618 1422 712">1.1.a.Notification: “System error. Unable to log out. Please try again later.”</td> </tr> <tr> <td data-bbox="612 712 715 806">4.1</td> <td data-bbox="715 712 1422 806">The logout button does not respond to user action due to a loading issue.</td> </tr> <tr> <td data-bbox="612 806 715 900"></td> <td data-bbox="715 806 1422 900">4.1.a The system displays a retry option or automatically redirects the user after resolving the issue.</td> </tr> </table>	1.1	The system encounters an error while processing the logout request.		1.1.a.Notification: “System error. Unable to log out. Please try again later.”	4.1	The logout button does not respond to user action due to a loading issue.		4.1.a The system displays a retry option or automatically redirects the user after resolving the issue.
1.1	The system encounters an error while processing the logout request.								
	1.1.a.Notification: “System error. Unable to log out. Please try again later.”								
4.1	The logout button does not respond to user action due to a loading issue.								
	4.1.a The system displays a retry option or automatically redirects the user after resolving the issue.								
Quality Requirements	<p>The logout process must complete within 2 seconds of user confirmation.</p> <ul style="list-style-type: none"> <li>-All session data must be securely deleted to prevent unauthorized access.</li> <li>-Users must be redirected to the login page immediately after logout.</li> </ul>								

### 2.4.3 Activity Diagram

#### 1.Create Profile:

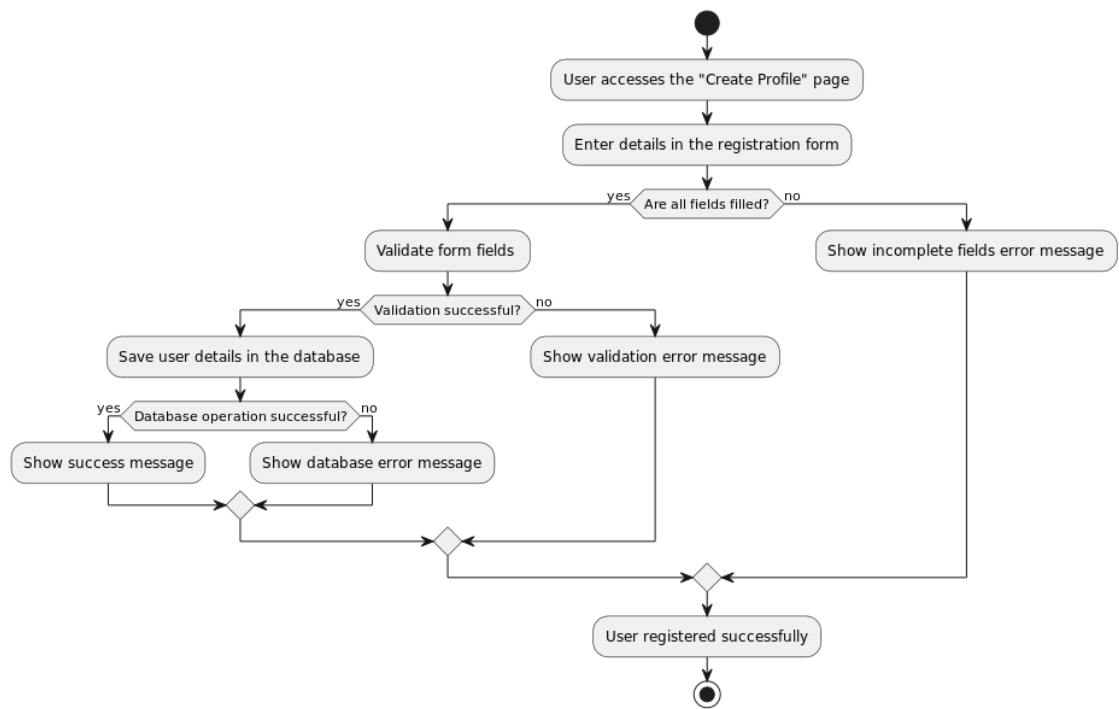


Figure 1 : Create Profile

## 2. Login



Figure 2: Login

## 3.Edit Profile



Figure 3: Edit profile

#### 4. Available medicine

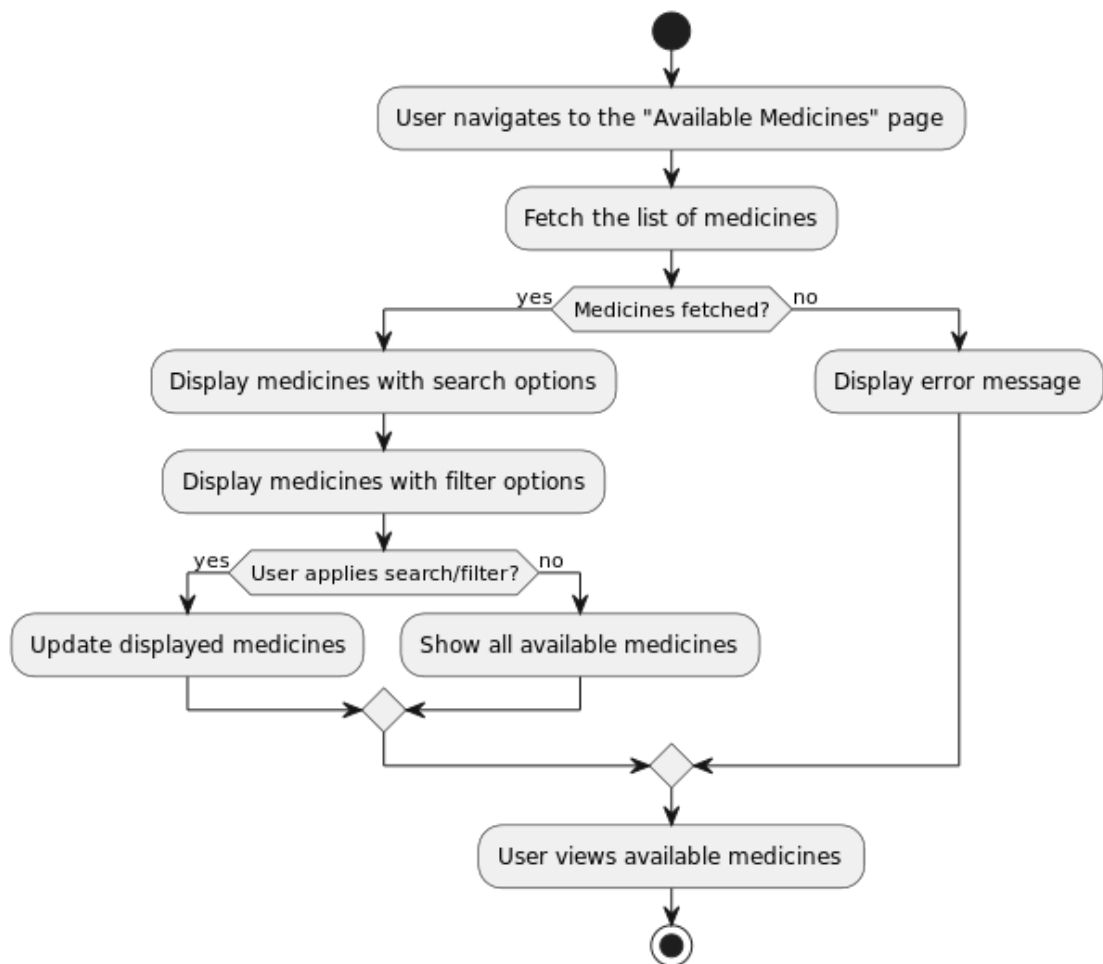


Figure 4: Available medicine

## 5. Apply medicine

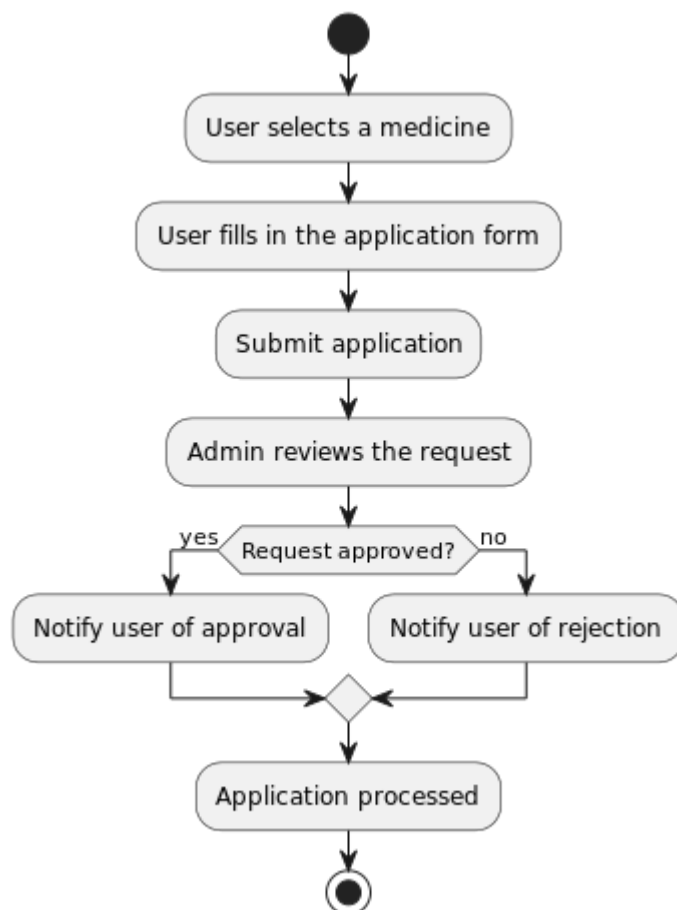


Figure 5: Apply medicine

## **6. Apply Donation**

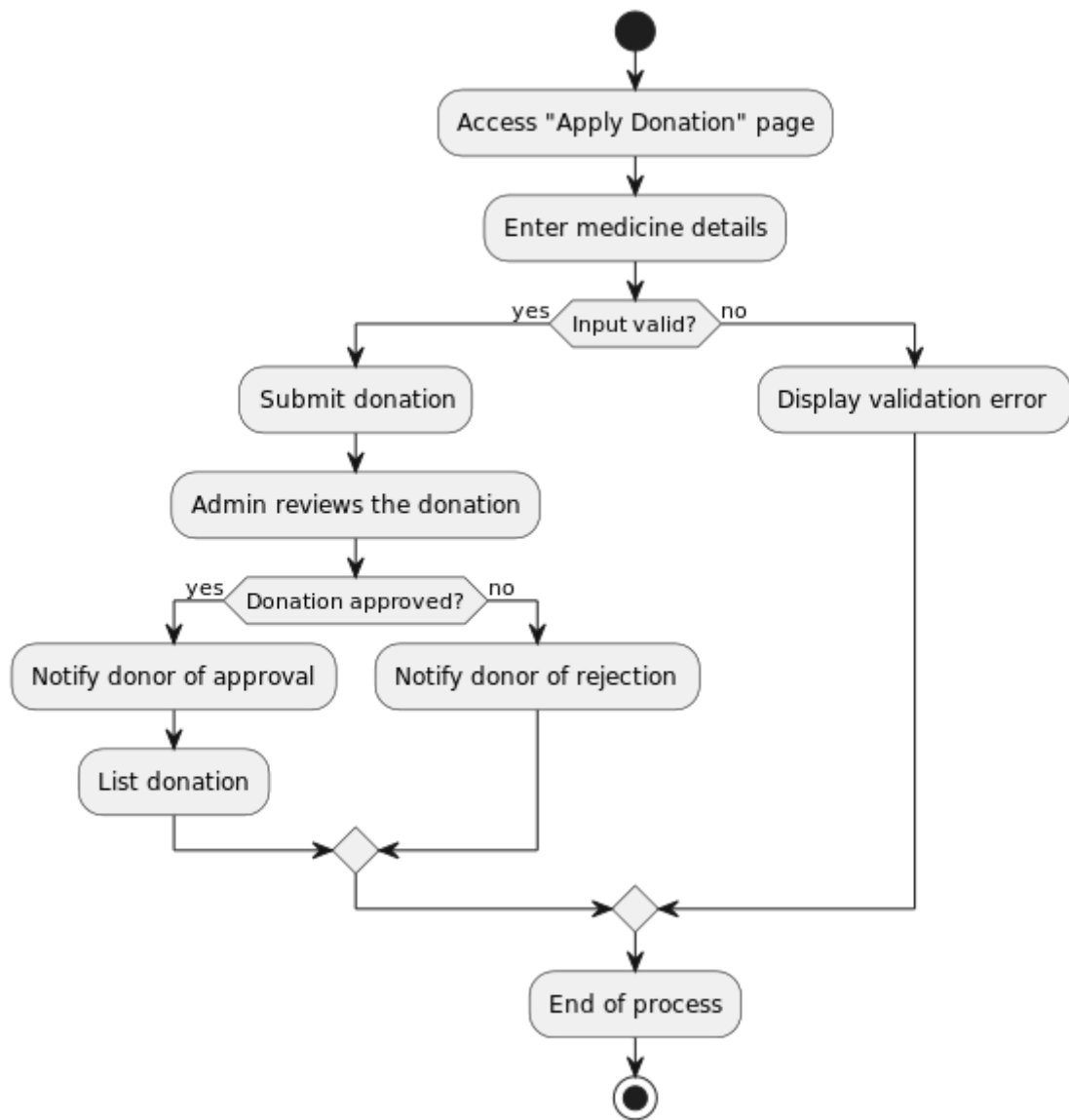


Figure 6: Apply donation

## 7. Notifications

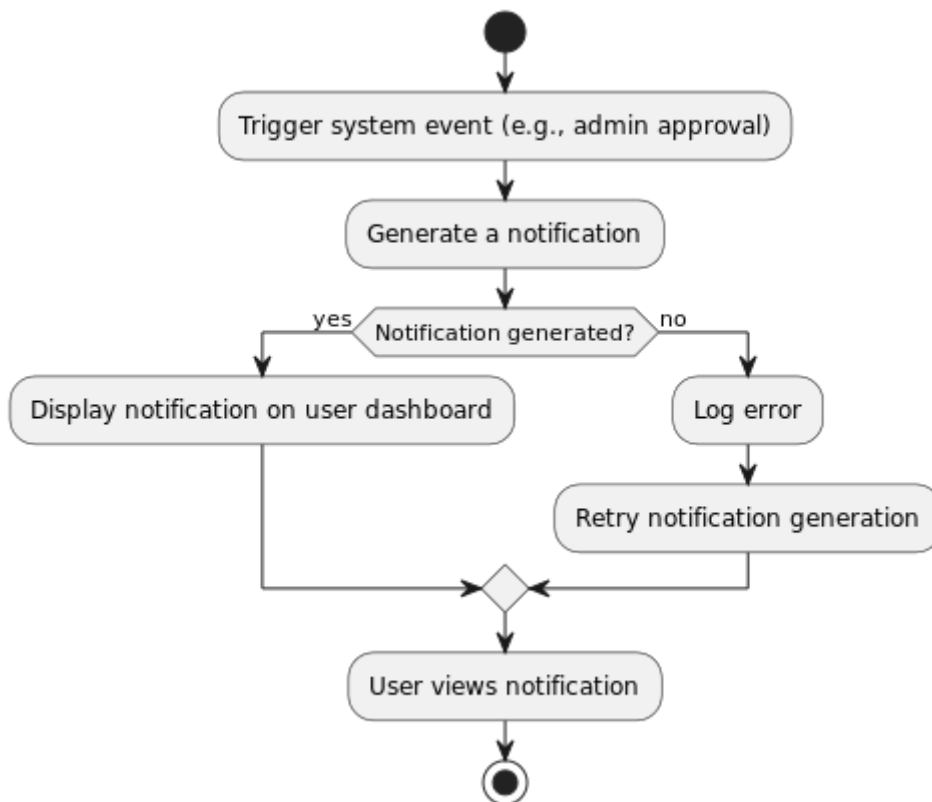


Figure 7: Notification

## 8. Manage Health Tips

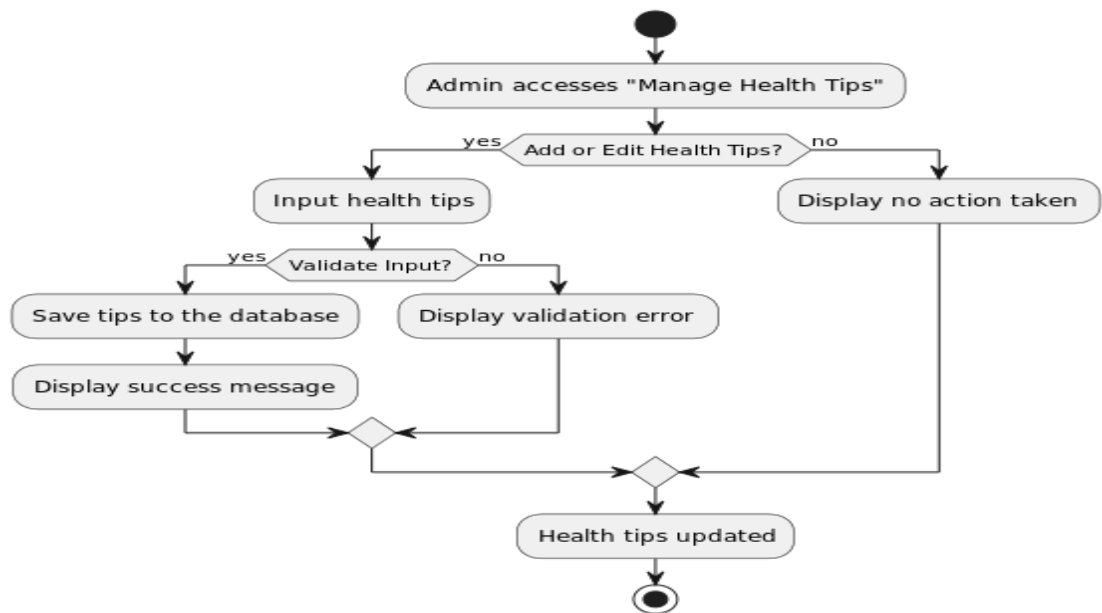


Figure 8: Manage Health Tips

## 9. Reset password

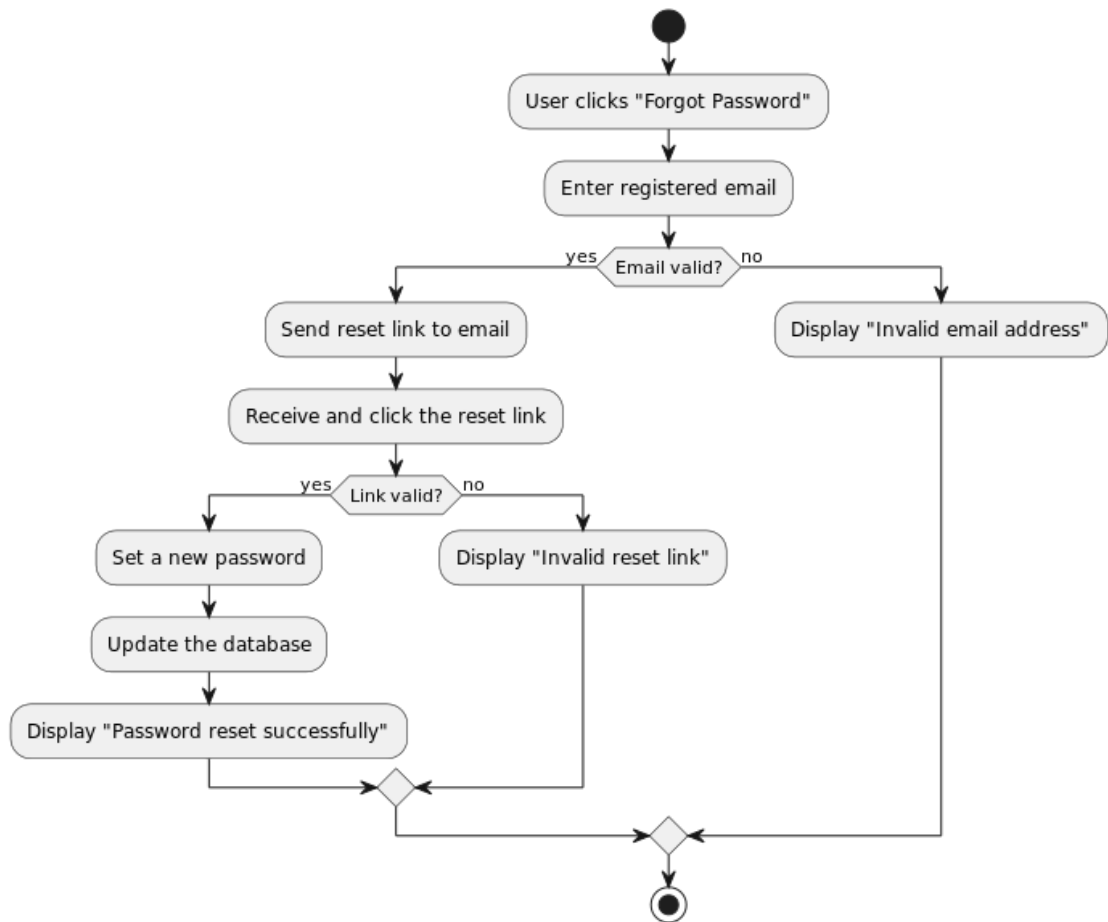


Figure 9: Reset password

## 10. Manage applications

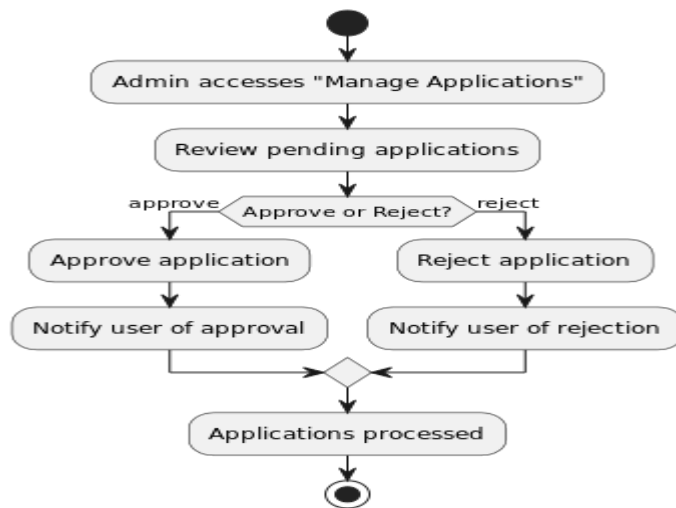


Figure 10: Manage applications

## 11. Logout

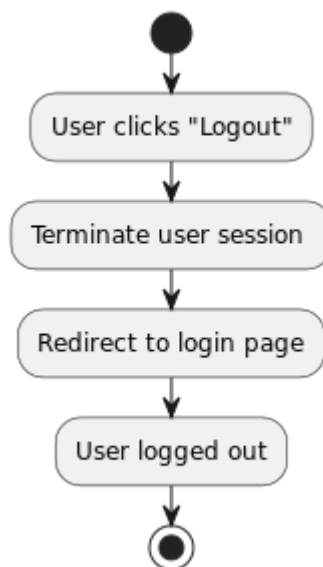


Figure 11: Logout

## **2.4.4 Sequence Diagram**

### **1. Create profile**

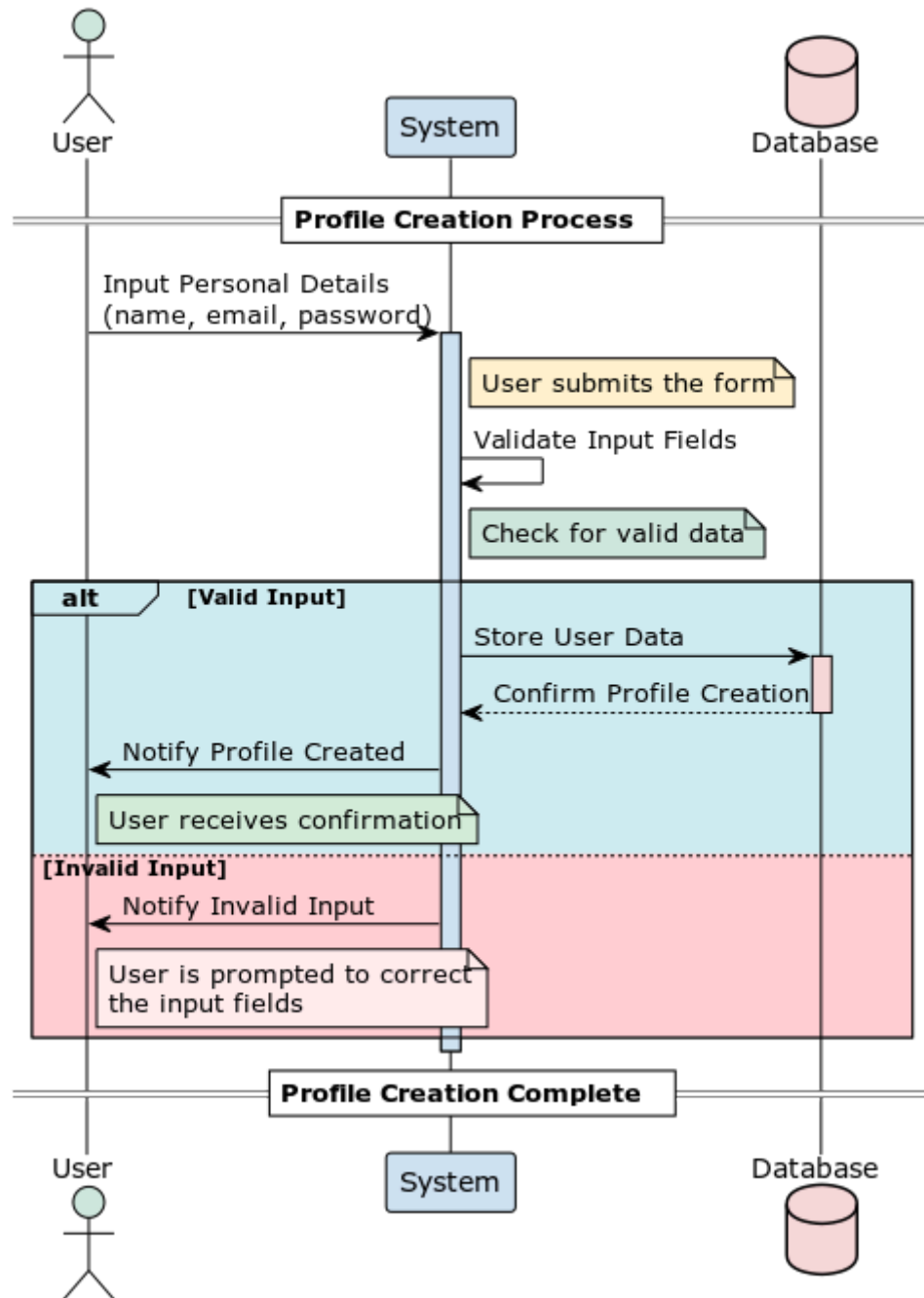


Figure 1: Create profile

## 2. Login

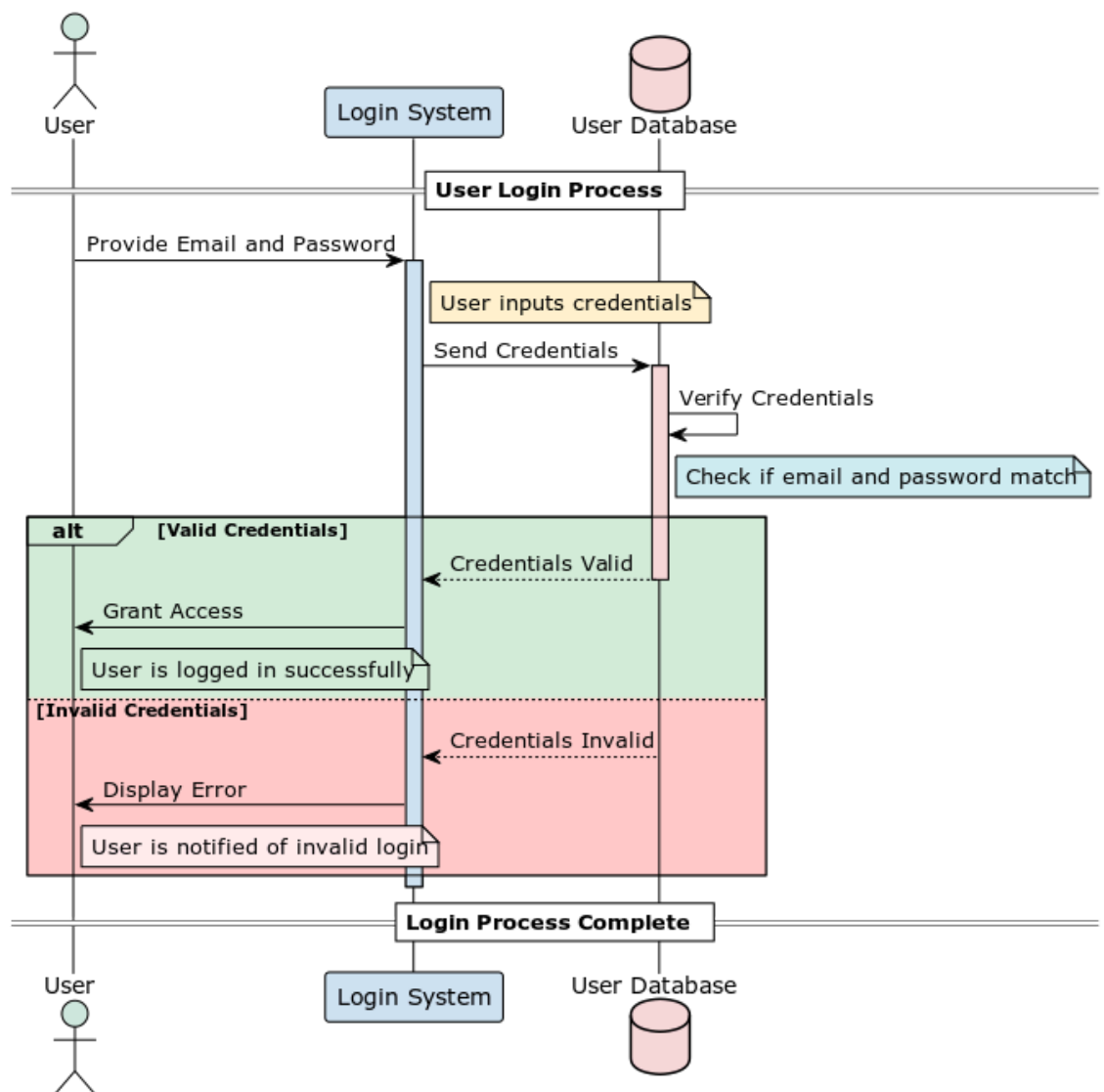


Figure 2: Login

### **3. Edit Profile**

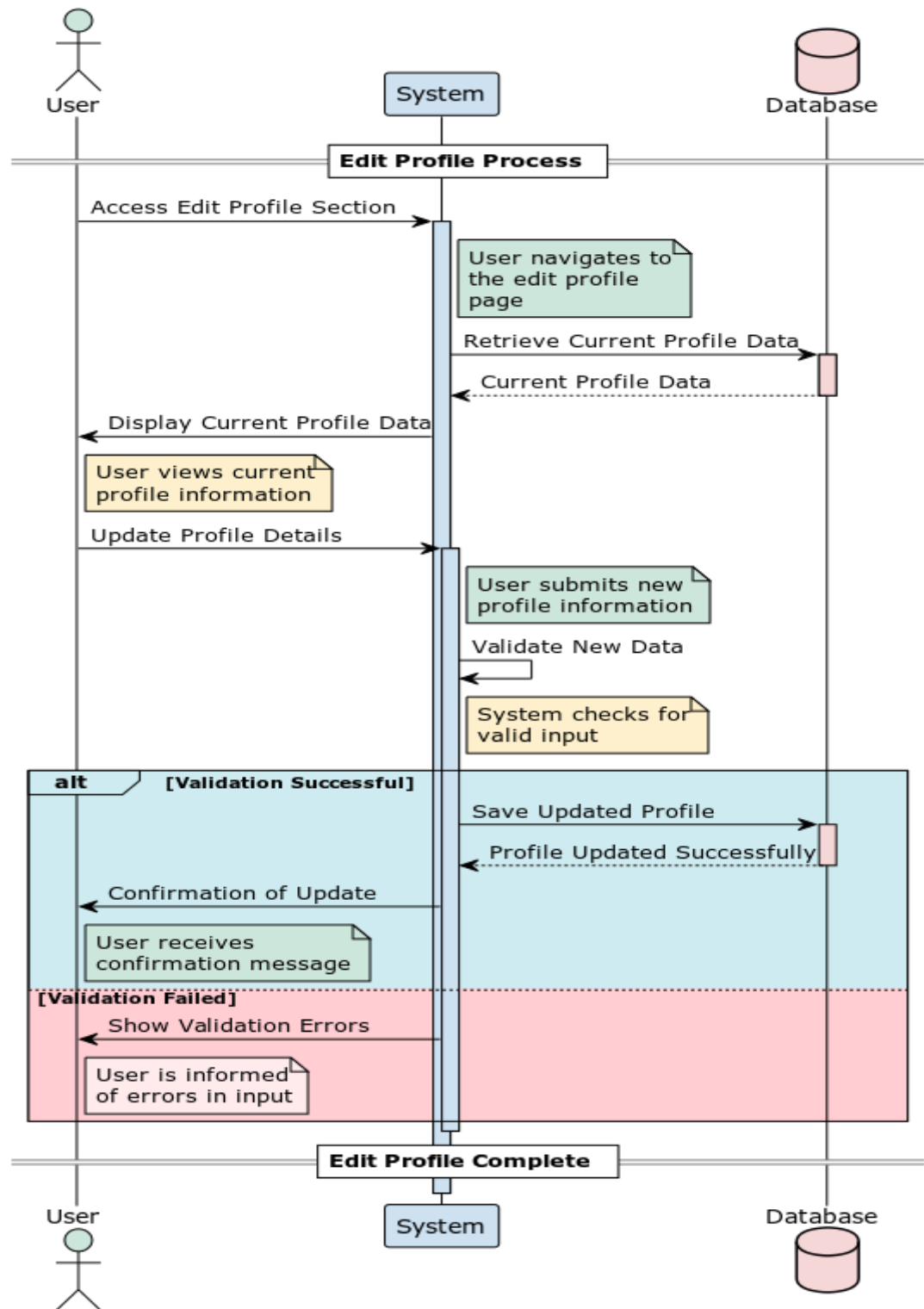


Figure 3: Edit Profile

**4. Available medicine, Apply medicine, Apply donation, Notifications**

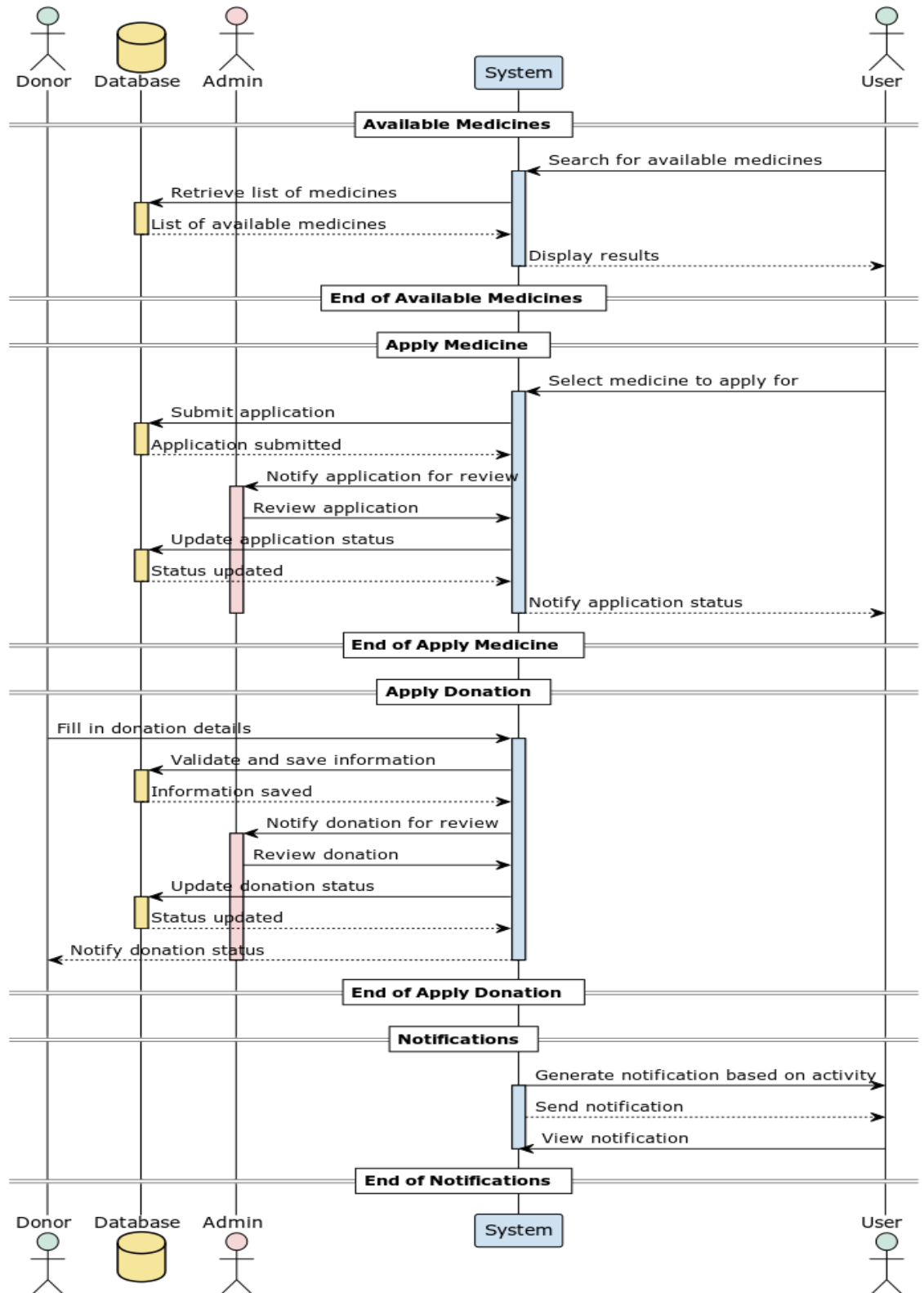


Figure 4: Available medicine, Apply medicine, Apply donation, Notifications

## **5. Manage health tips, Manage applications**

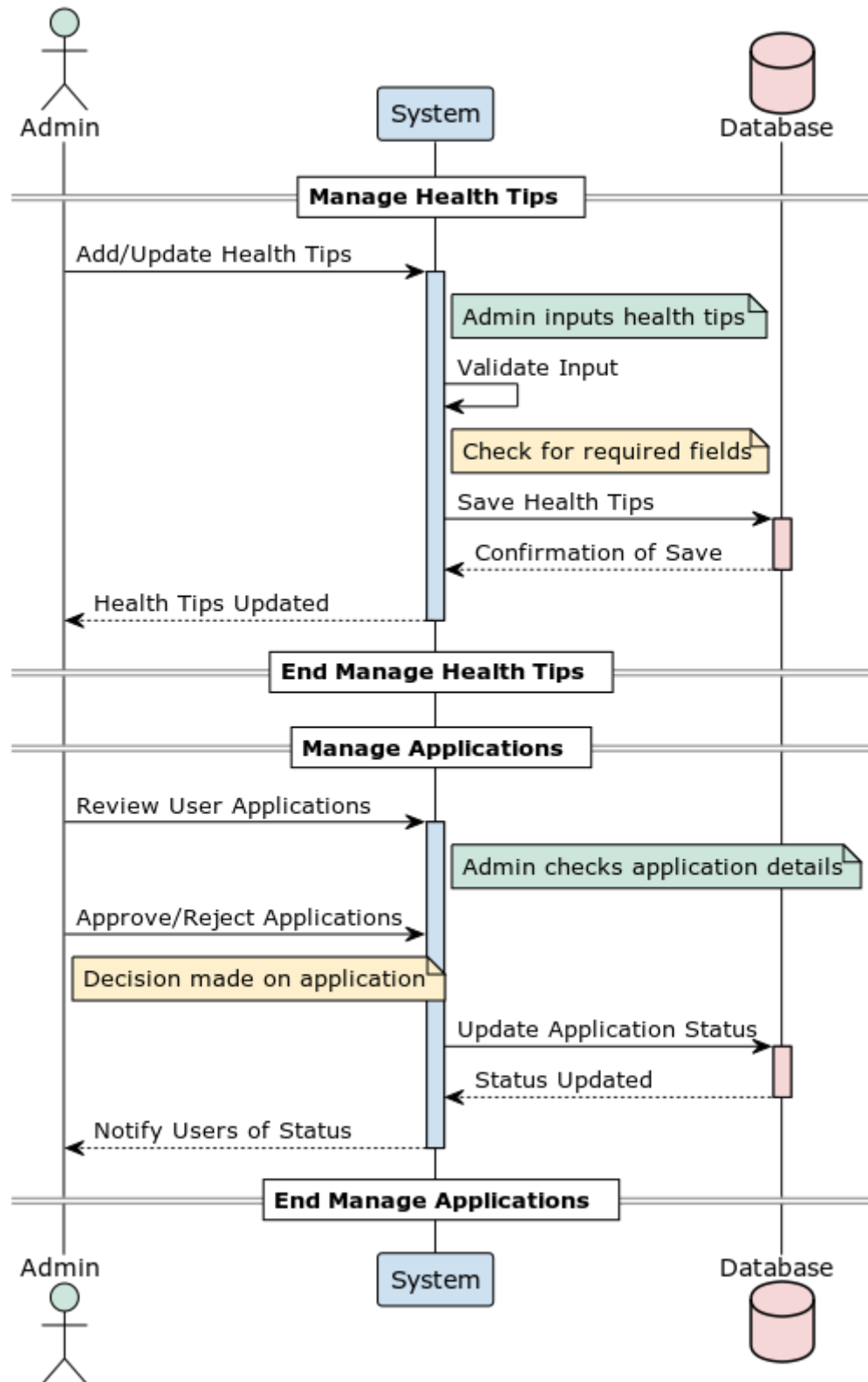


Figure 5: Manage health tips, Manage applications

## **6. Reset Password**

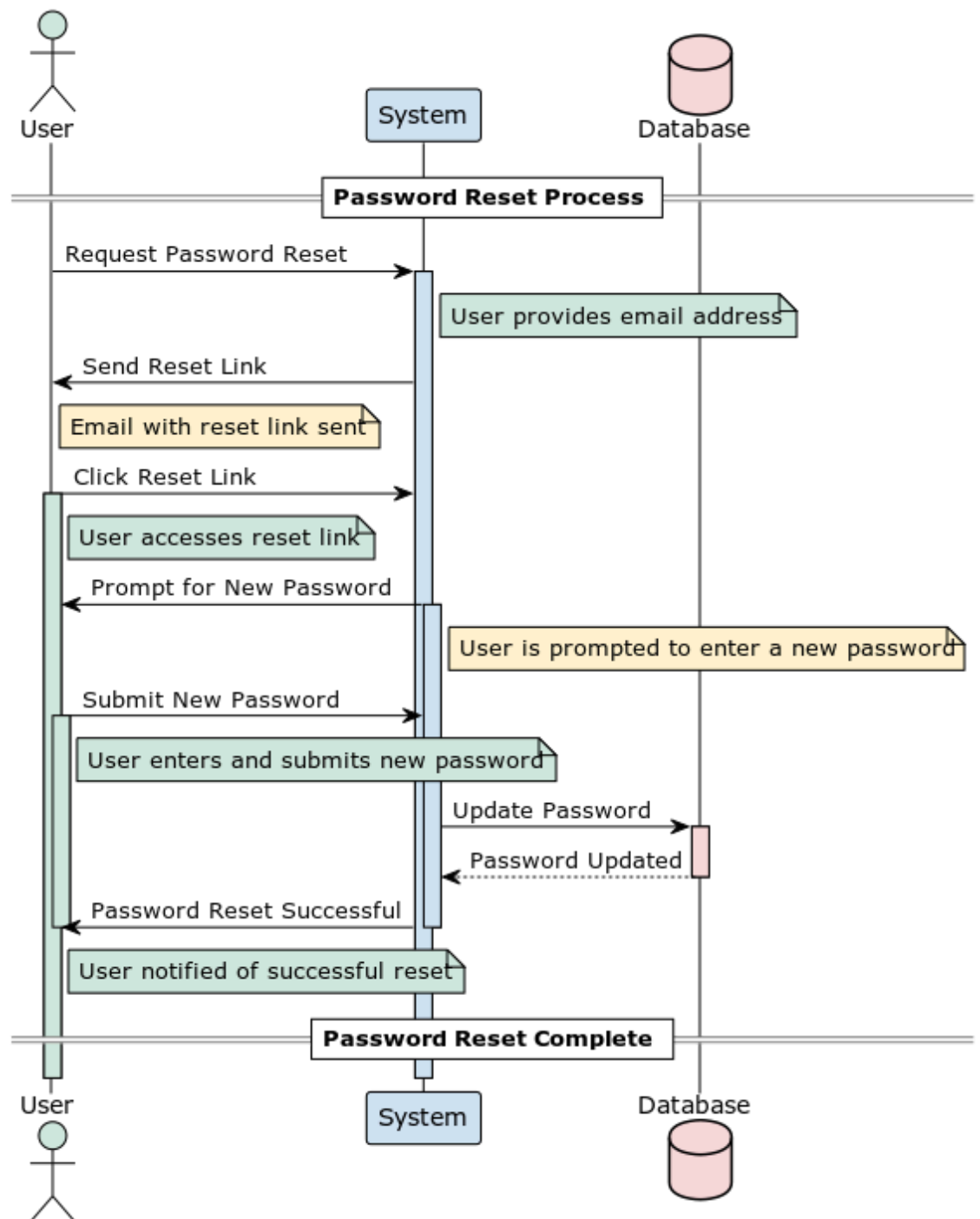


Figure 6: Reset password

## 7. Logout

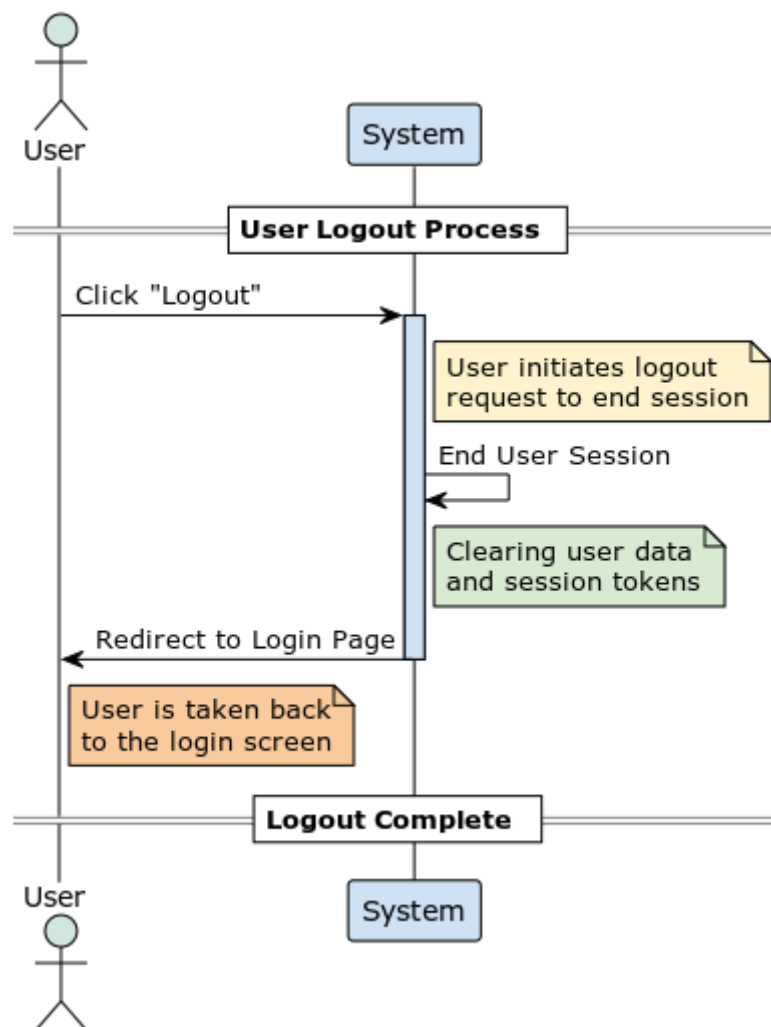


Figure 7: Logout

## 2.4.5 Class Diagram

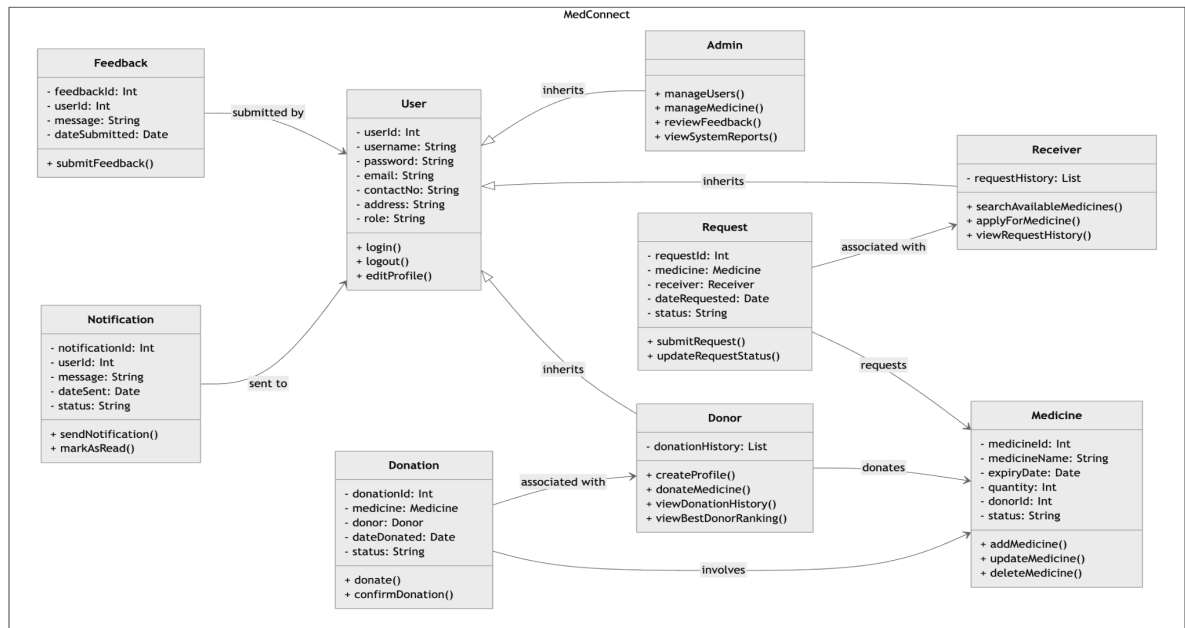


Figure 3: Class Diagram

## 2.4.6 ER Diagram

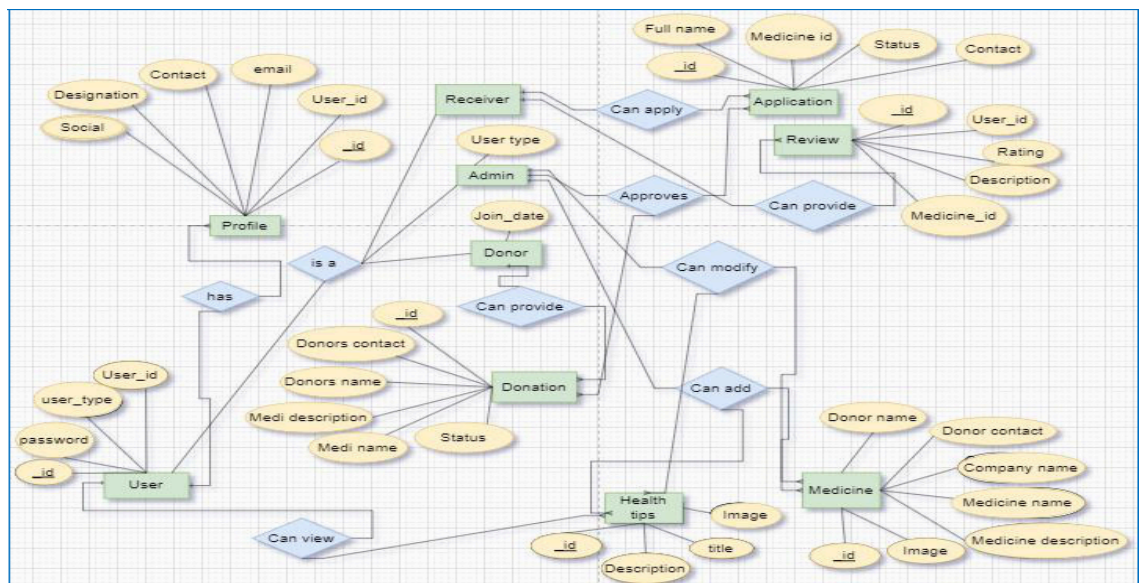


Figure 4: ER Diagram

## 2.5 Summary

In this chapter, we explored the comprehensive design aspects of the MedConnect platform, emphasizing how the system is structured to meet its objectives. The chapter detailed the design methodologies used to ensure the platform is user-friendly, efficient, and secure. It provided insights into the functional and non-functional requirements, outlining the specific capabilities the system must deliver, such as user registration, medicine donation, and application management.

The architectural design highlighted the use of a modular approach, ensuring scalability and ease of maintenance. Each module, such as user authentication, admin management, and notification systems, was carefully designed to align with the platform's goals of connecting medicine donors and recipients while adhering to regulatory compliance.

The database design section emphasized the use of a NoSQL database to handle dynamic and scalable data efficiently. It outlined how data flows through the system, ensuring data integrity and quick retrieval for seamless user interactions.

Additionally, diagrams such as the use case and activity diagrams were used to visually represent system workflows, providing clarity on how different components interact. Overall, this chapter established the blueprint for the platform's development, ensuring that MedConnect is both functionally robust and technically sound.

## **Chapter 3 Software Testing**

### **3.1 Introduction**

Software testing is an essential phase in the development of MedConnect to ensure the platform functions as intended, delivering a secure and reliable experience for all users. MedConnect is a medical donation platform that bridges the gap between donors—such as individuals, pharmacies, and hospitals—and recipients, including low-income individuals and underserved communities. Testing plays a crucial role in verifying the system's ability to manage medication listings, handle recipient requests, and ensure compliance with legal and regulatory standards.

The primary goal of testing MedConnect is to identify and eliminate any errors or inconsistencies in the system, ensuring that the platform operates seamlessly. This includes validating the integrity of features like user registration, donation listing, search functionalities, and admin approvals. Testing also ensures that the platform meets security standards, particularly for sensitive user data and compliance with regulations such as HIPAA and GDPR. By thoroughly testing the system, MedConnect guarantees an intuitive user experience while maintaining the trust of its stakeholders.

## **3.2 Testing Features**

### **3.2.1 Feature to Be Tested**

- a.** User Registration
- b.** User Login
- c.** Medicine Listing
- d.** Medicine Search
- e.** Donation Request Management
- f.** Notification System
- g.** Admin Login and Access
- h.** Admin Dashboard
- i.** User Feedback and Reviews
- j.** Health Tips Management
- k.** Password Management
- l.** System Security
- m.** User Logout
- n.** Admin Logout
- o.** Performance Testing
- p.** System Scalability
- q.** Mobile Responsiveness

## 3.3 Testing Strategies

### 3.3.1 Test Approach

The testing approach for **MedConnect** is designed to ensure that the platform operates smoothly, securely, and reliably across all features and functionalities. A combination of manual and automated testing methods will be employed to identify and address any issues. The testing process will be divided into multiple stages to cover all aspects of the platform comprehensively.

1. Unit Testing:

Each module, such as user registration, login, medicine listing, and search, will be tested individually to ensure they function correctly in isolation.

Developers will write test cases to validate inputs, outputs, and edge cases for each module.

2. Integration Testing:

The interaction between modules, such as user registration and login or donation requests and approvals, will be tested to ensure seamless communication and data flow.

Test scenarios will include verifying data consistency between the database and the user interface.

3. System Testing:

The complete MedConnect platform will be tested as a whole to ensure that all modules work together as expected.

Test cases will validate end-to-end workflows, such as a donor registering, listing a medicine, and the recipient successfully applying for it.

4. Security Testing:

The platform will be tested for vulnerabilities such as SQL injection, cross-site scripting (XSS), and denial-of-service (DoS) attacks.

User authentication, data encryption, and compliance with HIPAA/GDPR will be validated.

5. Performance Testing:

Load testing will evaluate the platform's behavior under normal and peak traffic conditions.

Stress testing will identify how the system handles extreme usage and recovers from failures.

6. User Acceptance Testing (UAT):

A group of real-world users, including donors, recipients, and administrators, will test the platform to ensure it meets their expectations and needs.

Feedback from UAT will be used to refine the platform before deployment.

7. Regression Testing:

After updates or bug fixes, the system will be retested to ensure new changes do not affect existing functionalities.

8. Cross-Browser and Mobile Testing:

The platform's compatibility with various web browsers and mobile devices will be validated to ensure a consistent user experience.

### 3.3.2 Pass/Fail Criteria

The pass/fail criteria for MedConnect define the benchmarks that determine whether a test case has been successfully completed or failed. These criteria ensure clarity and consistency in the evaluation of test results.

1. Pass Criteria:

The test case executes successfully, and the system delivers the expected output without any errors.

All required functionalities, such as user registration, donation management, and notifications, work as per the specifications.

Security tests show no vulnerabilities or risks that could compromise user data or system integrity.

Performance metrics, such as response time and system stability, meet the predefined thresholds under both normal and high-load conditions.

User workflows, such as donor-to-recipient interactions, are completed without interruptions or data inconsistencies.

2. Fail Criteria:

The system produces incorrect outputs or fails to execute the functionality described in the test case.

Errors or crashes occur during the execution of workflows or while interacting with key features.

Security vulnerabilities, such as exposed data or unauthorized access, are identified.

Performance metrics fall below acceptable levels, such as significant delays in response times or system failures under load.

User interface issues, such as broken layouts or inaccessible features on specific browsers or devices, are encountered.

### **3.4 System Testing (Test Cases with Report)**

#### **3.4.1 Testing Schedule**

<b>Test Phase</b>	<b>Time</b>	<b>Tester</b>
<b>Test Plan Creation</b>	1 week	Samen Yechar Joy
<b>Test Specification Creation</b>	2 weeks	Samen Yechar Joy
<b>Test Specification Team Review</b>	1 week	Samen Yechar Joy
<b>Unit Testing</b>	2 weeks	Samen Yechar Joy
<b>Integration Testing</b>	1 week	Samen Yechar Joy
<b>System Testing</b>	1 week	Samen Yechar Joy
<b>Security Testing</b>	1 week	Samen Yechar Joy
<b>Performance Testing</b>	1 week	Samen Yechar Joy
<b>User Acceptance Testing (UAT)</b>	2 weeks	Samen Yechar Joy

#### **3.4.2 Test Cases**

##### **Test Case 01: User Registration**

<b>Test Case: 1.1.1</b>	<b>Test Case Name:</b> User Registration
<b>System:</b> MedConnect	<b>Subsystem:</b> User Authentication
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-04-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-05-2024

---

**Description:** The user registers for the MedConnect system by providing valid registration information.

**Pre-condition:** The user accesses the registration page and inputs the required details.

Step	Name	Email	Password	Retype Password	Response	Pass/Fail	Comment
1	John Doe	john.doe@gmail.com	123456	123456	Registration successful	Pass	Registration is successful with valid details.
2		john.doe@gmail.com	123456	123456	Name field is empty	Fail	User must input a valid name.
3	John Doe		123456	123456	Email field is empty	Fail	User must input a valid email address.
4	John Doe	john.doe@gmail.com			Password fields are empty	Fail	Password and retype password must match.
5.	John Doe	john.doe@gmail.com	123456	654321	Passwords do not match	Fail	Password and retype password must match.

**Post-condition:** The user is successfully registered, and the registration process is considered complete with valid information.

---

### Test Case 02: User Login

<b>Test Case: 1.2.1</b>	<b>Test Case Name:</b> User Login
<b>System:</b> MedConnect	<b>Subsystem:</b> User Authentication
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-04-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The user logs into the MedConnect system using valid credentials.

**Pre-condition:** The user accesses the login page.

Step	Email	Password	Response	Pass/Fail	Comment
1	john.doe@gmail.com	123456	Login successful	Pass	Login is successful with valid credentials..
2	john.doe@gmail.com		Password field is empty	Fail	User must input a password.
3		123456	Email field is empty	Fail	User must input an email address.

4	john.doe@gmail.com	wrongpass	Invalid credentials	Fail	User must input correct credentials.
5	invalidemail@gmail.com	123456	Email not registered	Fail	User must input a registered email address

**Post-condition:** The user successfully logs into the system or receives a prompt to correct invalid credentials.

---

### Test Case 03: Medicine Listing

<b>Test Case: 1.3.1</b>	<b>Test Case Name:</b> Medicine Listing
<b>System:</b> MedConnect	<b>Subsystem:</b> Medicine Management
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

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**Description:** A donor lists medications for donation by providing complete and valid details.

**Pre-condition:** The donor is logged into the system and navigates to the “Add Medicine” page.

Step	Medicine Name	Expiry Date	Quantity	Response	Pass/Fail	Comment
1	Paracetamol	2025-12-31	20	Medicine added successfully	Pass	Medicine is listed with complete details.

2			20	Medicine name is missing	Fail	User must provide a valid medicine name.
3	Paracetamol	2025-12-31	20	Expiry date is missing	Fail	User must input an expiry date.
4	Paracetamol	2025-12-31	0	Invalid quantity	Fail	Quantity must be greater than zero.

**Post-condition:** The medicine is successfully listed in the inventory for donation or prompts the user to correct invalid entries.

---

#### Test Case 04: Medicine Search

<b>Test Case: 1.4.1</b>	<b>Test Case Name:</b> Medicine Search
<b>System:</b> MedConnect	<b>Subsystem:</b> Medicine Management
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** A recipient searches for available medications using various filters.

**Pre-condition:** The recipient is logged into the system and accesses the “Search Medicine” page.

Step	Filter	Search Term	Response	Pass/Fail	Comment
1	Medicine Name	Paracetamol	Search results displayed	Pass	Relevant medicines are displayed correctly.
2	Category	Pain Relief	Search results displayed	Pass	Results filtered by category.
3	Expiry Date	Before 2023-01	No results found	Pass	System correctly handles no matching results.
4			Search term is empty	Fail	User must input a search term.

**Post-condition:** The recipient successfully views search results or receives a prompt for invalid input.

---

### Test Case 05: Donation Request Management

<b>Test Case:</b> 1.5.1	<b>Test Case Name:</b> Donation Request Management
<b>System:</b> MedConnect	<b>Subsystem:</b> Request Management
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** A recipient submits a request for a listed medication, and the system processes it for approval by the administrator.

**Pre-condition:** The recipient is logged in and navigates to the medication details page.

Step	Medicine Name	Request Details	Response	Pass/Fail	Comment
1	Paracetamol	Request submitted	Request successfully created	Pass	Request is successfully submitted.
2		Request submitted	Medicine name is missing	Fail	User must select a valid medicine.
3	Paracetamol	Missing reason for request	Request creation failed	Fail	User must provide a reason for the request.
4	Paracetamol	Request submitted	Request already exists	Fail	System must prevent duplicate requests.

**Post-condition:** The request is successfully created or the recipient is prompted to correct errors.

---

### Test Case 06: Notification System

<b>Test Case:</b> 1.6.1	<b>Test Case Name:</b> Notification System
<b>System:</b> MedConnect	<b>Subsystem:</b> Notification Management

<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

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**Description:** The system sends notifications for various events, such as approvals, rejections, and updates.

**Pre-condition:** The user is logged in, and relevant events have occurred.

Step	Event Trigger	Response	Pass/Fail	Comment
1	Donation request approved	Notification delivered successfully	Pass	Notification is displayed correctly.
2	Donation request rejected	Notification delivered successfully	Pass	Notification is displayed correctly.
3	Medicine added to inventory	Notification not delivered	Fail	Notification must be delivered on addition.
4	Request update delayed	Notification delivered late	Fail	Notifications must be sent on time.

**Post-condition:** The user receives timely notifications or the system alerts the administrator of delivery issues.

---

## Test Case 07: Admin Login and Access

<b>Test Case: 1.7.1</b>	<b>Test Case Name:</b> Admin Login and Access
<b>System:</b> MedConnect	<b>Subsystem:</b> Admin Authentication
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-12-2024

---

**Description:** The administrator logs into the MedConnect system with valid credentials to access admin-specific functionalities.

**Pre-condition:** The admin accesses the login page.

Step	Email	Password	Response	Pass/Fail	Comment
1	admin@medconnect.com	admin123	Login successful	Pass	Admin logged in successfully.
2	admin@medconnect.com		Password field empty	Fail	Admin must input a password.
3		admin123	Email field empty	Fail	Admin must input a valid email.
4	wrong@medconnect.com	admin123	Invalid credentials	Fail	Admin must input valid credentials.

**Post-condition:** The admin successfully logs in or receives an error prompt for incorrect credentials.

---

### Test Case 08: Admin Dashboard

<b>Test Case: 1.8.1</b>	<b>Test Case Name:</b> Admin Dashboard
<b>System:</b> MedConnect	<b>Subsystem:</b> Admin Management
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-12-2024

---

**Description:** The administrator uses the dashboard to manage users, donations, and system activities.

**Pre-condition:** The admin is logged into the system.

Step	Action	Response	Pass/Fail	Comment
1	View user list	User list displayed	Pass	Admin can view the list of users.
2	Approve donation request	Request approved successfully	Pass	Admin action is processed as expected.

3	Reject donation request	Request rejected successfully	Pass	Admin action is processed as expected.
4	Delete user	User deletion failed	Fail	Admin must be able to delete users if needed.

**Post-condition:** Admin successfully performs actions on the dashboard or encounters an appropriate error.

---

### Test Case 09: User Feedback and Reviews

<b>Test Case: 1.9.1</b>	<b>Test Case Name:</b> User Feedback and Reviews
<b>System:</b> MedConnect	<b>Subsystem:</b> Feedback Management
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-12-2024

---

**Description:** The user submits feedback about their experience with the platform, and the system stores it for administrative review.

**Pre-condition:** The user is logged into the system.

Step	Feedback Message	Response	Pass/Fail	Comment
1	Positive feedback provided	Feedback submitted successfully	Pass	Feedback is stored and displayed to the admin.
2	No feedback provided	Submission failed	Fail	User must input a feedback message.

**Post-condition:** Feedback is successfully submitted or the user is prompted to correct errors.

---

### Test Case 10: Health Tips Management

<b>Test Case: 1.10.1</b>	<b>Test Case Name:</b> Health Tips Management
<b>System:</b> MedConnect	<b>Subsystem:</b> Health Tips
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The admin manages health tips by adding, editing, or removing them.

**Pre-condition:** The admin is logged into the dashboard.

Step	Action	Response	Pass/Fail	Comment
1	Add health tip	Health tip added successfully	Pass	Admin can add health tips.
2	Edit health tip	Health tip updated	Pass	Admin can modify health tips.
3	Delete health tip	Health tip removed	Pass	Admin can delete unnecessary health tips.

**Post-condition:** Health tips are successfully managed or errors are reported to the admin.

---

### Test Case 11: Password Management

<b>Test Case:</b> 1.11.1	<b>Test Case Name:</b> Password Management
<b>System:</b> MedConnect	<b>Subsystem:</b> User Authentication
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

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**Description:** Users reset or update their passwords securely through the platform.

**Pre-condition:** The user initiates the password reset or update process.

Step	Action	Response	Pass/Fail	Comment
1	Enter valid current password	Password updated successfully	Pass	Password change works as expected.
2	Leave password field empty	Update failed	Fail	User must input the current password.
3	Enter mismatched new passwords	Update failed	Fail	New passwords must match.

**Post-condition:** Password is updated securely, or the user is prompted to correct errors.

---

### Test Case 12: System Security

<b>Test Case: 1.12.1</b>	<b>Test Case Name:</b> System Security
<b>System:</b> MedConnect	<b>Subsystem:</b> Security
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

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**Description:** The platform ensures that sensitive data is encrypted and protected against unauthorized access and security vulnerabilities such as SQL injection, XSS attacks, and brute force login attempts.

**Pre-condition:** The system is operational, and security tests are initiated.

Step	Action	Response	Pass/Fail	Comment
1	Attempt SQL injection	Attack prevented	Pass	The system blocks unauthorized database access.
2	Attempt cross-site scripting (XSS)	Attack prevented	Pass	The system sanitizes user inputs effectively.
3	Brute force login attempts	User account locked	Pass	System blocks access after multiple failed attempts.
4	Test data encryption	Data is encrypted	Pass	Sensitive information is securely stored.

**Post-condition:** The system passes all security tests or alerts the team to potential vulnerabilities.

---

### Test Case 13: User Logout

<b>Test Case: 1.13.1</b>	<b>Test Case Name:</b> User Logout
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<b>System:</b> MedConnect	<b>Subsystem:</b> Authentication
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The user logs out securely, ensuring that the session is terminated, and no sensitive information is accessible after logout.

**Pre-condition:** The user is logged in and selects the logout option.

Step	Action	Response	Pass/Fail	Comment
1	Click on logout button	User logged out successfully	Pass	The system blocks unauthorized database access.
2	Access account post-logout	Access denied	Pass	The system sanitizes user inputs effectively.

**Post-condition:** The user session is securely terminated, and the platform denies access until the next login.

---

## Test Case 14: Admin Logout

<b>Test Case: 1.14.1</b>	<b>Test Case Name:</b> Admin Logout
<b>System:</b> MedConnect	<b>Subsystem:</b> Authentication
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The administrator logs out securely, ensuring session termination and restricted access to admin-specific features after logout.

**Pre-condition:** The administrator is logged in and selects the logout option.

Step	Action	Response	Pass/Fail	Comment
1	Click on logout button	Admin logged out successfully	Pass	Admin session is securely terminated.
2	Access admin dashboard post-logout	Access denied	Pass	System blocks unauthorized access.

**Post-condition:** The admin session is securely terminated, and access to admin-specific functionalities is restricted.

---

## Test Case 15: Performance Testing

<b>Test Case: 1.15.1</b>	<b>Test Case Name:</b> Performance Testing
<b>System:</b> MedConnect	<b>Subsystem:</b> System Performance
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The platform is tested for responsiveness, stability, and performance under various load conditions, including peak usage.

**Pre-condition:** The system is operational, and load testing tools are set up.

Step	Action	Response	Pass/Fail	Comment
1	Simulate 100 concurrent users	System responds normally	Pass	Platform handles normal traffic efficiently.
2	Simulate 1,000 concurrent users	System remains stable	Pass	No significant latency observed.
3	Simulate 5,000 concurrent users	System crashes or slows down	Fail	Platform scalability must be improved.

**Post-condition:** The system performs as expected under normal and stress conditions or identifies bottlenecks for optimization.

---

### Test Case 16: System Scalability

<b>Test Case: 1.16.1</b>	<b>Test Case Name:</b> System Scalability
<b>System:</b> MedConnect	<b>Subsystem:</b> Scalability
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The platform scales effectively to accommodate increasing numbers of users and transactions.

**Pre-condition:** Simulations of increased workloads are configured.

Step	Action	Response	Pass/Fail	Comment
1	Add 10,000 users	System remains stable	Pass	Platform handles increased user count.
2	Simulate high transaction volume	System processes requests smoothly	Pass	No significant delays or failures.

**Post-condition:** The platform scales effectively under increased user and transaction load.

---

### Test Case 17: Mobile Responsiveness

<b>Test Case: 1.17.1</b>	<b>Test Case Name:</b> Mobile Responsiveness
<b>System:</b> MedConnect	<b>Subsystem:</b> User Interface
<b>Designed by:</b> Samen Yechar Joy	<b>Design Date:</b> 20-05-2024
<b>Executed by:</b> Samen Yechar Joy	<b>Execution Date:</b> 05-11-2024

---

**Description:** The platform is tested for proper layout, navigation, and usability across various devices and screen resolutions.

**Pre-condition:** The platform is accessed on different devices (desktop, mobile, tablet).

Step	Device	Screen Resolution	Response	Pass/Fail	Comment
1	Desktop	1920x1080	Layout displayed correctly	Pass	Desktop interface is responsive.
2	Smartphone	360x640	Layout displayed correctly	Pass	Mobile layout is user-friendly.
3	Tablet	768x1024	Layout displayed correctly	Pass	Tablet interface adjusts properly.

**Post-condition:** The platform is responsive and fully functional on all tested devices and screen resolutions.

---

### 3.5 Summary

This chapter outlines the comprehensive testing framework for the **MedConnect** platform. It includes detailed test case descriptions for critical functionalities such as admin login and logout, user feedback, health tips management, password management, and system security. The testing strategy ensures that the platform is secure, scalable, and responsive across various devices. Performance testing and scalability assessments validate the platform's ability to handle high traffic and transaction volumes. Additionally, mobile responsiveness tests ensure a seamless user experience across multiple devices. By addressing key system components and functionalities, this chapter demonstrates how the testing process ensures a reliable, user-friendly, and secure platform for all stakeholders.

## Chapter 4 Deployment and Maintenance

### 4.1 Introduction

The deployment and maintenance phase of the MedConnect platform focuses on ensuring the system is delivered effectively to end-users while maintaining its functionality, performance, and security over time. Deployment involves releasing the platform in a controlled manner, providing accessibility to users, and ensuring smooth integration with existing systems. Maintenance includes monitoring, updating, and resolving issues that may arise post-deployment. These steps ensure that MedConnect remains reliable, user-friendly, and aligned with its intended purpose of bridging the gap between surplus medications and those in need.

### 4.2 Integrated Development Environment (IDE) / Code Editors

For developing MedConnect, Visual Studio Code (VS Code) has been used as the primary code editor. Its lightweight design, robust debugging tools, and rich extensions ecosystem make it ideal for managing a project of this scale. The editor's integrated terminal and Git support streamline the development workflow, enabling efficient code writing, testing, and debugging.

### 4.3 Programming Language

**MedConnect** is built primarily using the JavaScript programming language, leveraging the modern framework **Next.js 14**, which is based on **React.js**. Next.js provides server-side rendering, API routing, image optimization, and other advanced features that enhance the platform's performance and efficiency. The framework simplifies the development of reusable components, improving code maintainability and scalability.

For backend services, such as handling authentication and user interactions, Node.js is used. The server-side environment ensures seamless management of requests and secure data handling.

### 4.4 User Interface Design

MedConnect's user interface is designed using **React.js** components for interactive and responsive design. The styling is done using TailwindCSS, a popular utility-first CSS framework. While TailwindCSS provides flexibility, its complexity in large projects is managed

with the use of ShadCN/UI, a component library built on TailwindCSS for consistent and customizable UI design.

This approach ensures a visually appealing and user-friendly interface, tailored to meet the needs of both donors and recipients on the platform.

#### 4.5 Database

MedConnect utilizes **MongoDB**, a NoSQL database, to store and manage data. MongoDB's flexibility and scalability make it well-suited for dynamic and evolving data models. Data such as user profiles, donation records, and medication inventories are stored in BSON format (a binary JSON format), ensuring efficient querying and retrieval.

The project integrates **Mongoose**, an Object Document Mapper (ODM), to simplify interactions with the database. This tool enables schema definition, data validation, and streamlined CRUD (Create, Read, Update, Delete) operations.

#### 4.6 Deployment and Hosting

For deployment, **MedConnect** is hosted on Vercel, a platform optimized for Next.js projects. Vercel's automated CI/CD (Continuous Integration/Continuous Deployment) pipeline simplifies the process, automatically deploying updates whenever new code is pushed to the GitHub repository.

Additionally, backend APIs and services, such as the Flask-based health insights generator, are deployed using Render. This ensures reliable access to APIs and efficient scaling to meet the demands of users.

#### Summary

This chapter outlines the tools and technologies used in the development and deployment of **MedConnect**. By utilizing modern frameworks, scalable database solutions, and automated deployment pipelines, the platform achieves high performance, user satisfaction, and long-term maintainability. The combination of these technologies enables MedConnect to fulfill its mission of bridging the gap between surplus medications and those in need.

## **Chapter 5 User Manual**

### **5.1 Introduction**

The user manual serves as a comprehensive guide to help users understand and navigate the MedConnect platform effectively. It provides detailed instructions for utilizing the platform's core functionalities, including registering as a user, searching for medications, making donations, and managing requests. This manual is designed to cater to all user types—donors, recipients, and administrators—by offering clear, step-by-step guidelines. Whether users are accessing MedConnect for the first time or require assistance with specific features, this manual ensures a seamless and intuitive experience while fostering the platform's mission of connecting surplus medications with those in need.

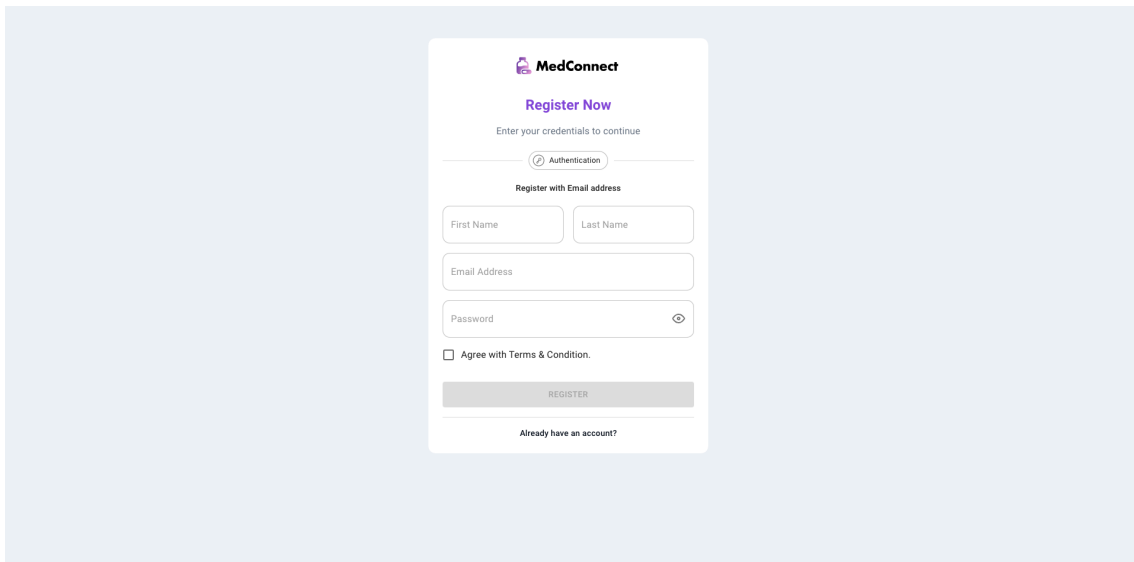
### **5.2 Project Functionalities**

**Admin email: mediaid-admin@gmail.com<br>**

**Admin password: 123456789**

#### **5.2.1 Signup Page**

User can sign up by providing first name, last name, email address and password.

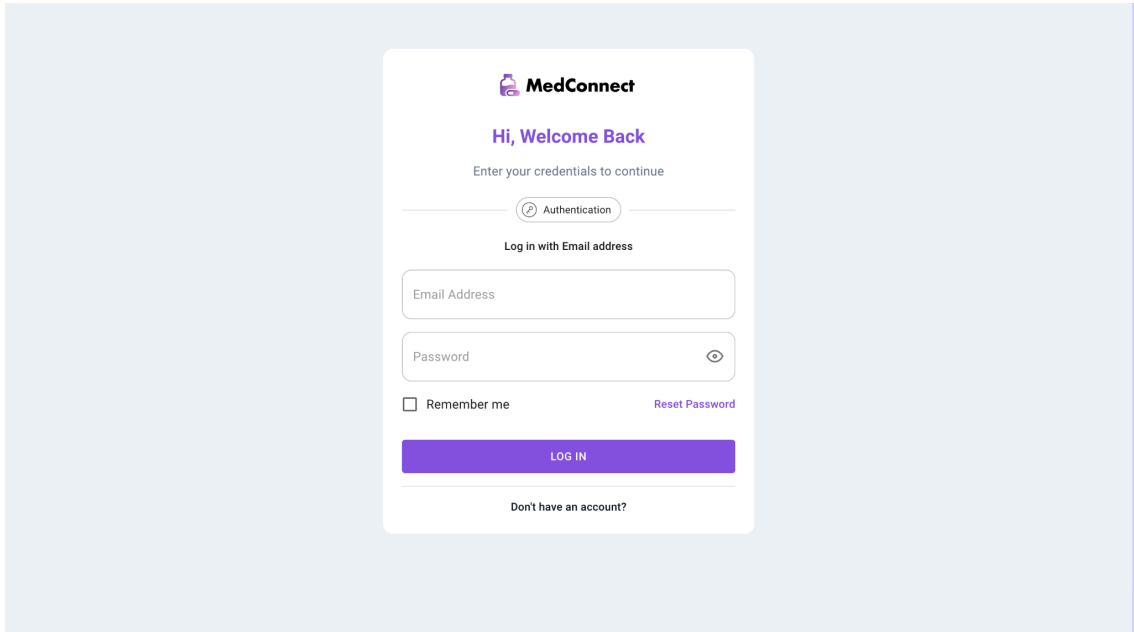


The image shows a registration form for MedConnect. At the top, there is the MedConnect logo and the text "Register Now". Below this, it says "Enter your credentials to continue". There is a progress indicator for "Authentication" which is currently active. The registration method is "Register with Email address". The form includes input fields for "First Name", "Last Name", "Email Address", and "Password". There is a checkbox for "Agree with Terms & Condition." and a "REGISTER" button. At the bottom, there is a link for "Already have an account?".

**Figure 1: Signup**

### 5.2.2 Login Page

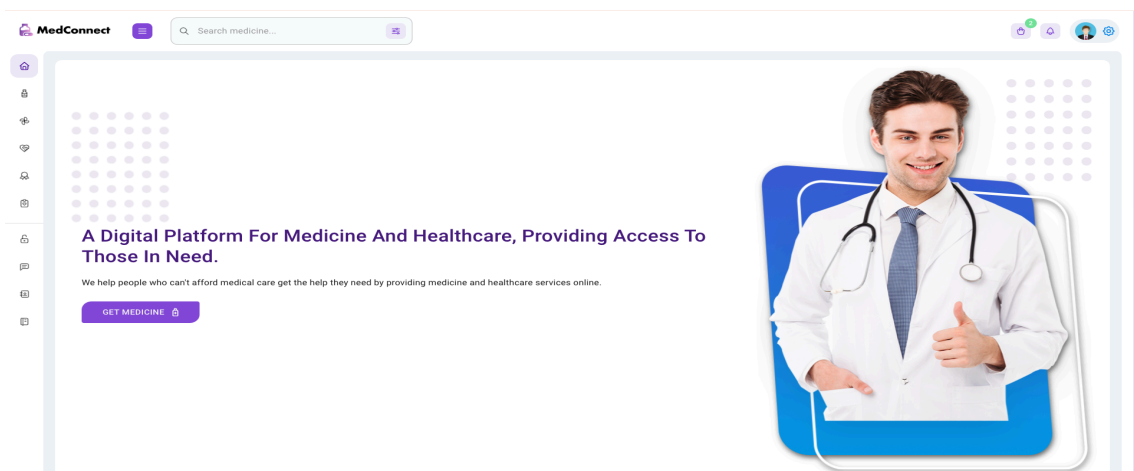
With email address user can log into the system later he has to provide password too.



**Figure 2 : Login Page**

### 5.2.3 Home Page

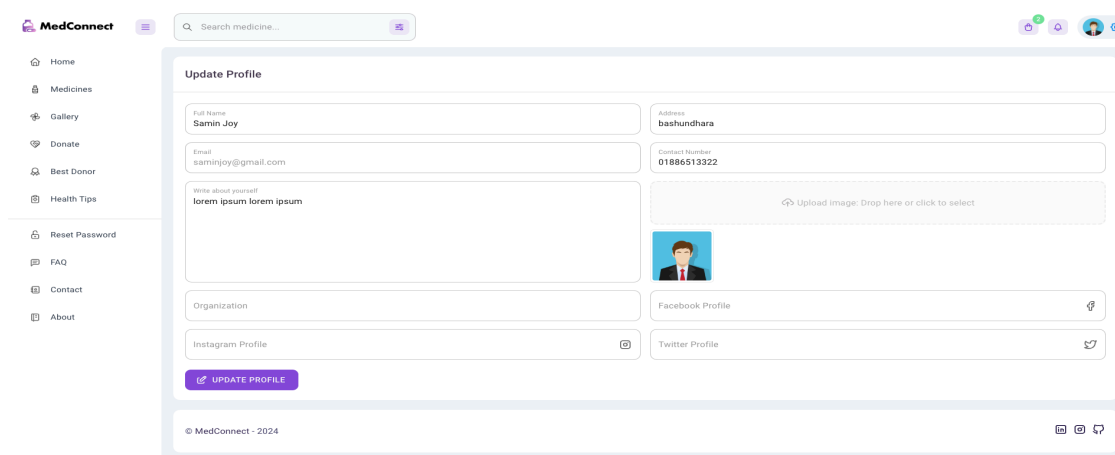
The Home Page is the central hub of the MedConnect platform, providing users with an overview of its features and functionalities. It serves as the starting point for all users, including donors, recipients, and administrators.



**Figure 3 : Home Page**

## 5.2.4 Update/ Edit Profile

Users can update or edit their profile details, such as their first name, last name, email address, and contact information. They can also change their password securely. The system validates the updated information to ensure accuracy and compliance with platform requirements.

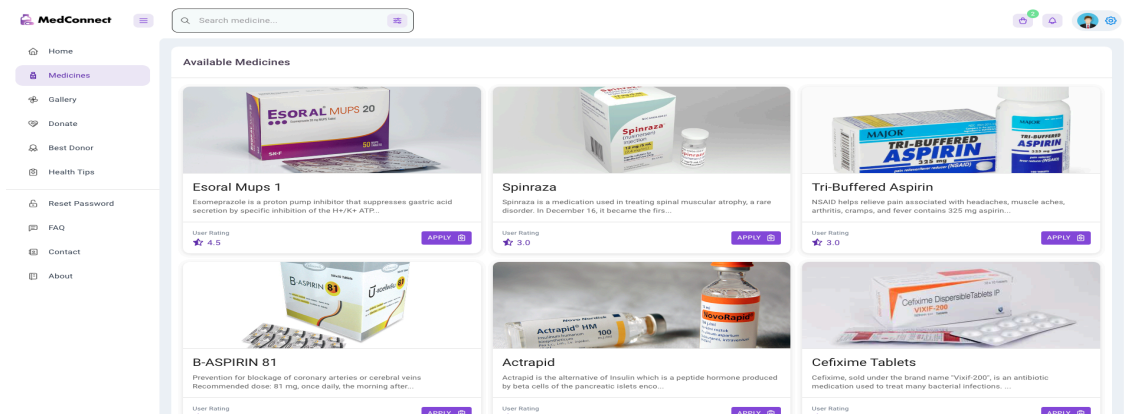


The screenshot displays the 'Update Profile' interface within the MedConnect application. On the left, a navigation sidebar lists various options: Home, Medicines, Gallery, Donate, Best Donor, Health Tips, Reset Password, FAQ, Contact, and About. The main content area is titled 'Update Profile' and contains several input fields: 'Full Name' (filled with 'Samin Joy'), 'Address' (filled with 'bashundhara'), 'Email' (filled with 'saminjoy@gmail.com'), and 'Contact Number' (filled with '01886513322'). There is a text area for 'Write about yourself' containing 'lorem ipsum lorem ipsum'. A profile picture section shows a placeholder image and a button to 'Upload image: Drop here or click to select'. Below this are fields for 'Organization', 'Facebook Profile', 'Instagram Profile', and 'Twitter Profile'. A purple 'UPDATE PROFILE' button is located at the bottom of the form. The footer of the page includes the copyright notice '© MedConnect - 2024' and social media icons.

Figure 4 : Update/Edit Profile

## 5.2.5 Available Medicine

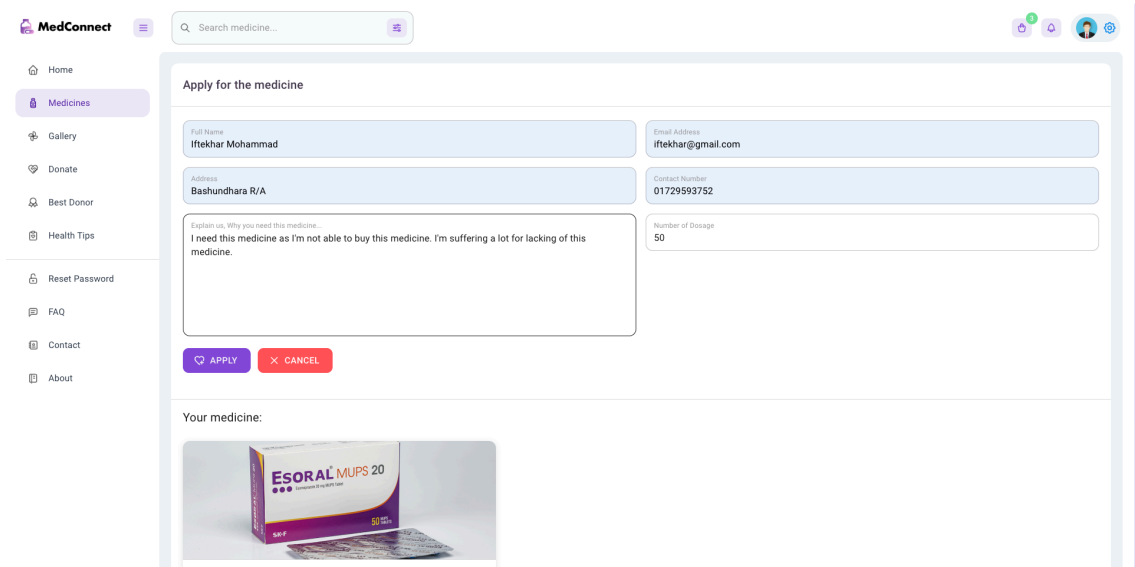
“Available Medicine” feature provides users with a comprehensive list of medications currently available for donation. Users can filter and search the list based on medicine name, type, or other criteria to find what they need quickly. Each entry includes detailed information about the medication, such as its name, quantity, expiration date, and donor details (if applicable). This feature ensures recipients can easily identify and apply for the medications they require.



**Figure 5 : Available Medicine**

### 5.2.6 Apply for medicine

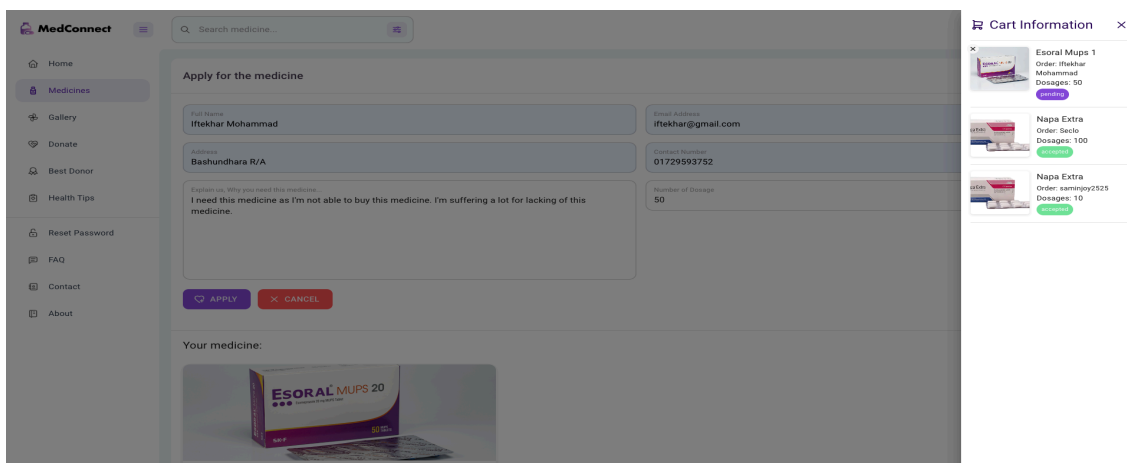
“Apply for Medicine” feature allows recipients to request specific medications listed on the MedConnect platform. Users can browse the available medications and submit an application by providing details such as the required quantity, reason for the request, and any additional information. The system validates the application and notifies the user once their request has been processed.



**Figure 6 : Apply for medicine**

### 5.2.7 Requested Medicine

This feature within the cart option allows users to manage the medications they have applied for on the MedConnect platform. This feature provides a centralized view of all requested medicines, along with their status (pending, approved, or rejected).



**Figure 7 : Requested Medicine**

### 5.2.8 Our Gallery

This section showcases visual content related to MedConnect’s mission, activities, and impact. It features images of successful medicine donations, community engagement events, and testimonials from recipients and donors.

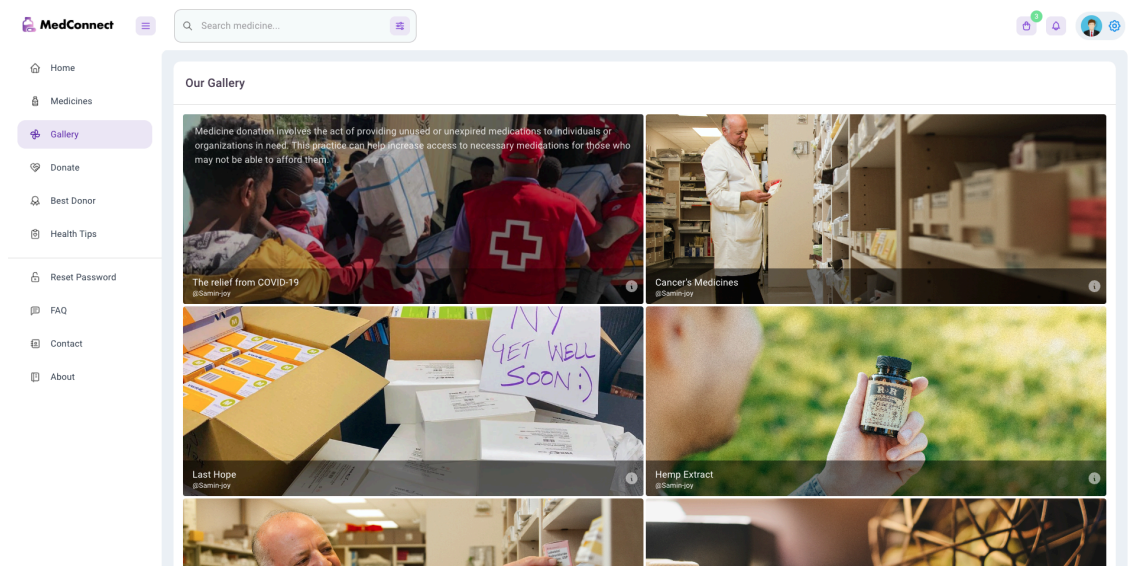
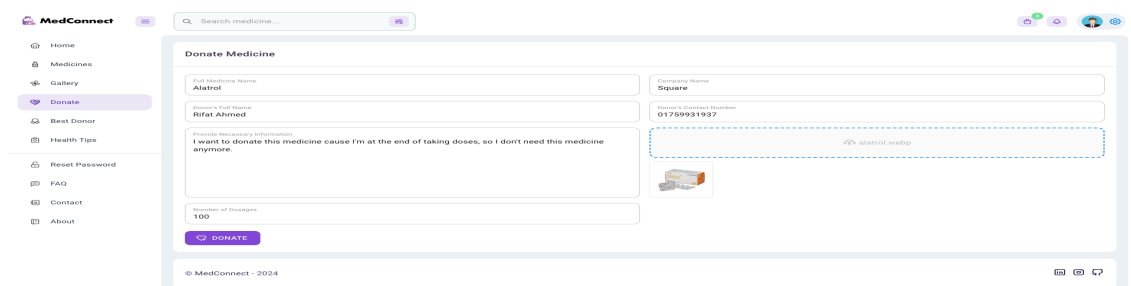


Figure 8 : Our Gallery

### 5.2.9 Apply for Donation

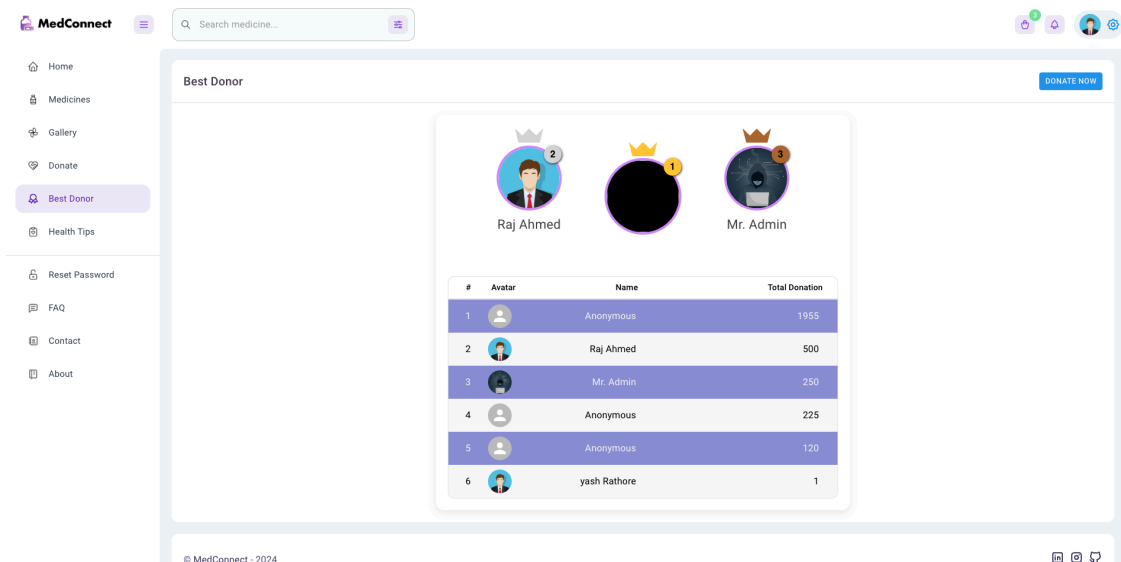
“Apply for Donation” feature enables donors to offer surplus medications for those in need. This feature provides a user-friendly form where donors can input details about the medications they wish to donate, such as the name, quantity, expiration date, and any additional information. Once submitted, the donation is reviewed by the system or administrator for verification before being listed in the available medicines section.



**Figure 9 : Apply for donation**

### 5.2.10 Best Donor

The “Best Donor” feature highlights the top contributors to the MedConnect platform. It recognizes individuals or organizations that have made significant donations.



**Figure 10 : Best Donor**

### 5.2.11 Health tips

The “Health Tips” feature provides users with valuable insights and recommendations to promote better health and wellness.

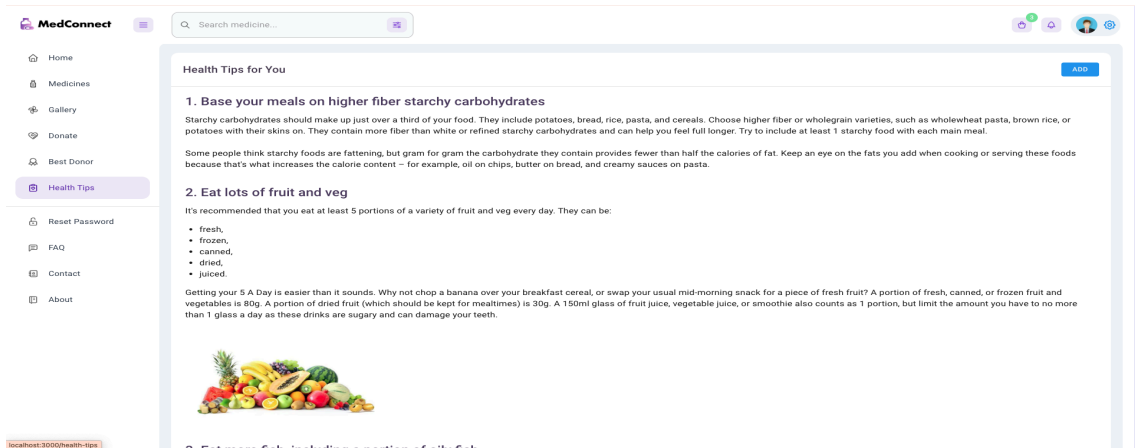


Figure 11 : Health Tips

### 5.2.12 FAQ

“FAQ” section addresses common questions and concerns that users may have about using the MedConnect platform. It is designed to provide quick and clear answers, making the platform more user-friendly and accessible.

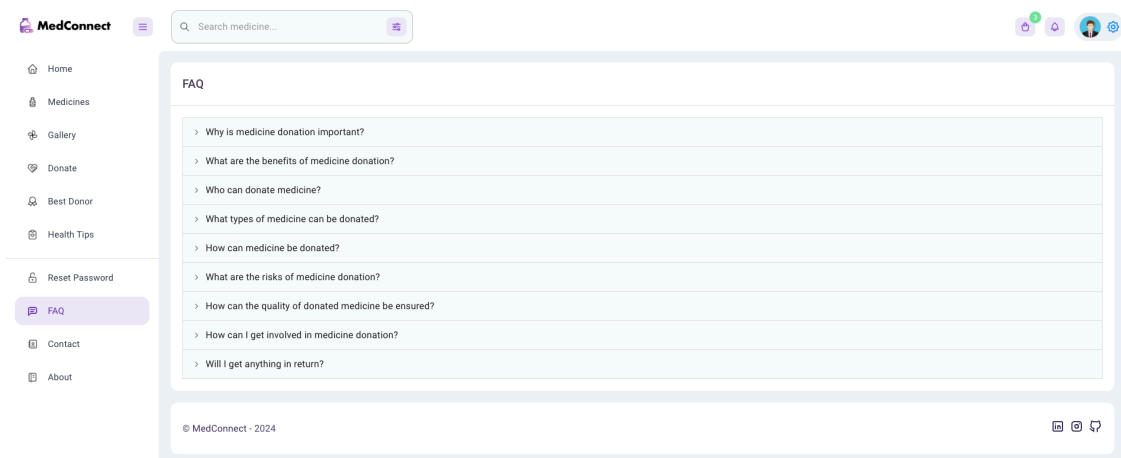


Figure 12 : FAQ

### 5.2.13 Contact Us

“Contact Us” feature provides users with a straightforward way to reach out to the MedConnect team for assistance, feedback, or inquiries. Whether users have technical issues, questions about donations or requests, or general feedback, this section ensures open communication between the platform and its users.

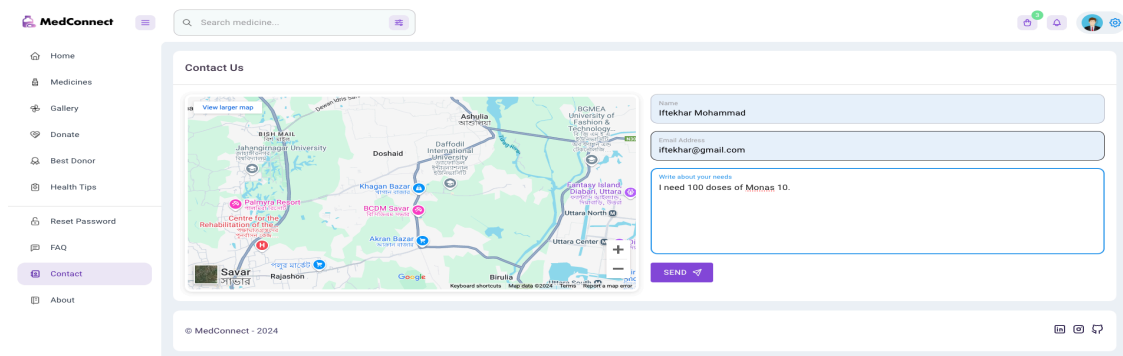
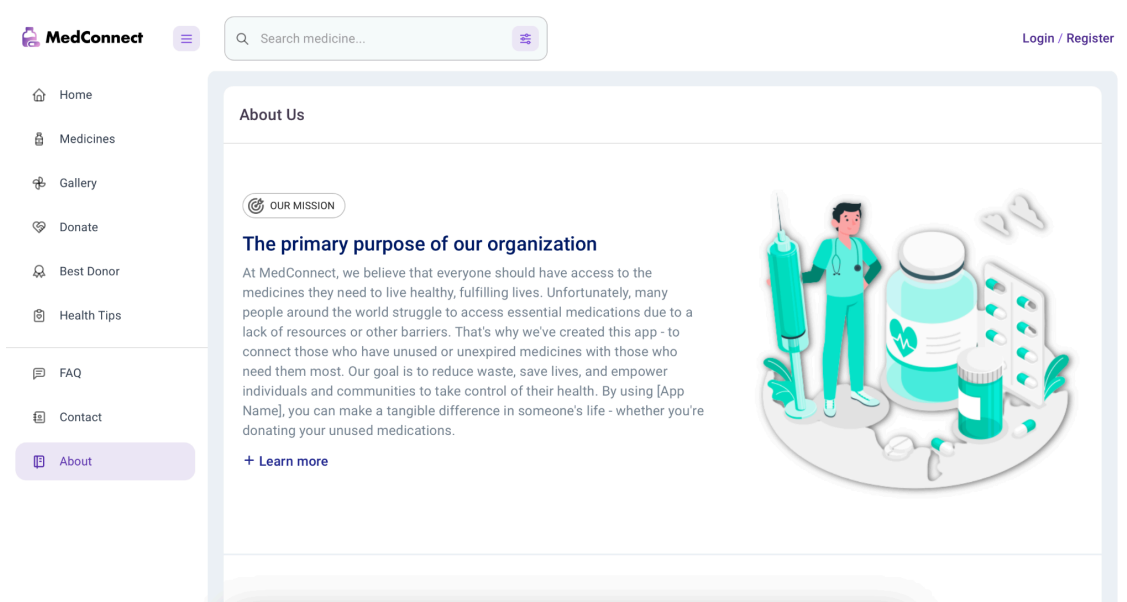


Figure 13: Contact Us

### 5.2.14 About Us

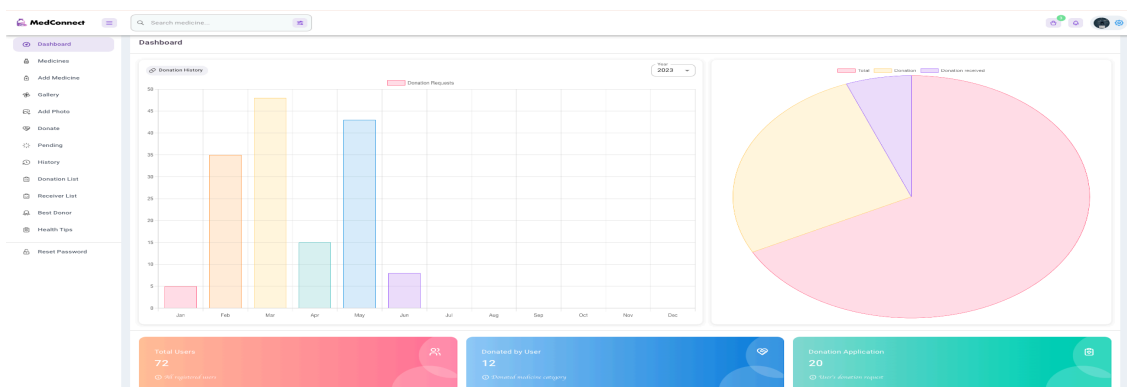
“About Us” section provides an overview of MedConnect’s mission, vision, and values, helping users understand the platform’s purpose and goals. It highlights the platform’s commitment to reducing medication waste, improving healthcare access, and fostering a community-driven approach to sharing surplus medications.



**Figure 14 : About Us**

### 5.2.15 Admin Dashboard

The Admin Dashboard serves as the central control panel for administrators to manage the MedConnect platform effectively. It provides a comprehensive view of platform activities, including user management, medicine donation approvals, and overall system performance. The dashboard ensures that administrators can maintain a secure, efficient, and user-friendly platform.



**Figure 15 : Admin Dashboard**

### 5.2.16 Add Medicine

Admin can add medicine by giving the medicine information which will be displayed in the Available medicine page.

The screenshot shows the 'Add New Medicine' form in the MedConnect application. The form is located in the main content area, with a sidebar on the left containing navigation options: Dashboard, Medicines, Add Medicine (highlighted), Gallery, Add Photo, Donate, Pending, History, Donation List, Receiver List, Best Donor, Health Tips, and Reset Password. The form itself has a search bar at the top with the text 'Search medicine...'. Below the search bar, the form is titled 'Add New Medicine' and contains several input fields: 'Full Medicine Name', 'Company Name', 'Donor's Full Name', and 'Donor's Contact Number'. There is a large text area labeled 'Provide Necessary Information' and an image upload area with the text 'Upload image: Drop here or click to select'. At the bottom of the form, there is a 'Number of Dosages' field with the value '1' and a purple 'ADD MEDICINE' button. The footer of the form displays '© MedConnect - 2024' and social media icons.

**Figure 16 : Add Medicine**

### 5.2.17 Add Photo

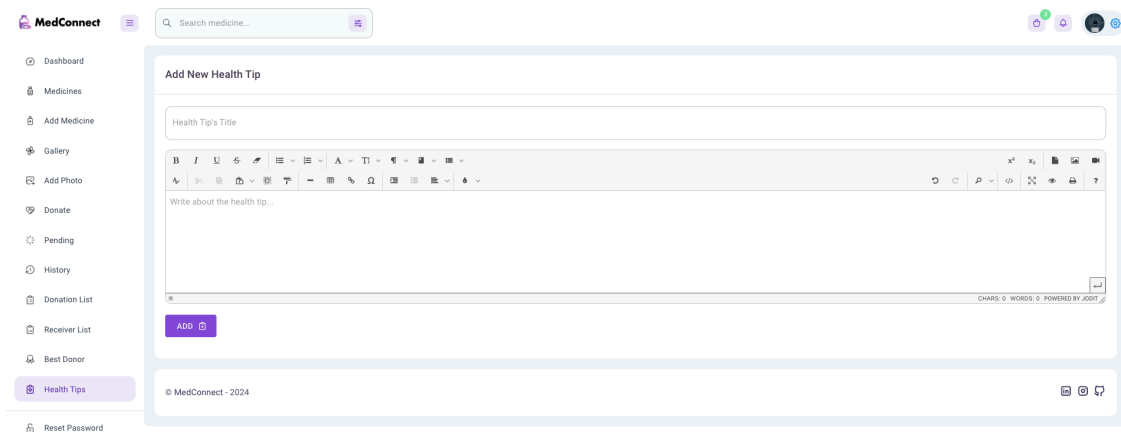
Admin can add photo by providing details in the Our gallery section.

The screenshot shows the 'Add Photo to Gallery' form in the MedConnect application. The form is located in the main content area, with a sidebar on the left containing navigation options: Dashboard, Medicines, Add Medicine, Gallery (highlighted), Add Photo, Donate, Pending, History, Donation List, Receiver List, Best Donor, Health Tips, and Reset Password. The form itself has a search bar at the top with the text 'Search medicine...'. Below the search bar, the form is titled 'Add Photo to Gallery' and contains several input fields: 'Gallery Image Title' and 'Author Name'. There is a large text area labeled 'Provide Necessary Information' and an image upload area with the text 'Upload image: Drop here or click to select'. At the bottom of the form, there is a purple 'ADD PHOTO' button. The footer of the form displays '© MedConnect - 2024' and social media icons.

**Figure 17 : Add Photo**

### 5.2.18 Add Health Tips

Admin can add health tips in the Health tips page.



**Figure 18 : Add Health Tips**

### 5.2.19 Pending Request

Here admin can approve or reject Donors, Receiver's applications.

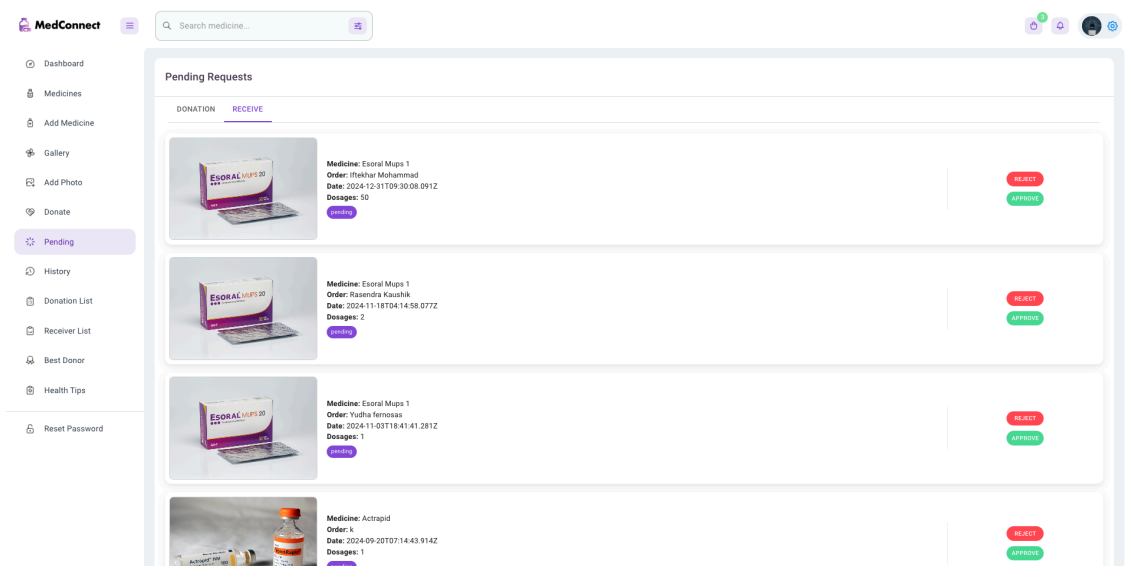


Figure 19 : Pending Request

### 5.2.20 History

Here admin can monitor the history of donated and received medicine.

Avatar	Username	Role	Medicine	Action	Date
	Samin Joy	User	Esoral Mups 1	apply/receive	17 minutes ago
	Medi Admin	Admin	Napa Extra	accept/receive	about 19 hours ago
	Samin Joy	User	Napa Extra	apply/receive	about 20 hours ago
	Medi Admin	Admin	Insuline	accept/donation	5 days ago
	Samin Joy	User	Insuline	apply/donate	5 days ago
	Medi Admin	Admin	Napa Extra	accept/receive	5 days ago
	Samin Joy	User	Napa Extra	apply/receive	5 days ago
	Rashen Kaushik	User	Esoral Mups 1	apply/receive	about 1 month ago
	Yudha fernosas	User	Esoral Mups 1	apply/receive	about 2 months ago
	Medi Admin	Admin	Dolo 650	reject/donation	3 months ago
	Rasendra Kaushik	User	Actrapid	apply/receive	3 months ago

**Figure 20 : History**

### 5.2.21 Donation List

Admin can see donation list here.

Avatar	Username	Medicine	Company	Total Donated	Action
	Anonymous	Esoral Mups 1	SK+F	270	Block
	Anonymous	Spinraza	Spinraza	120	Block
	Mr. Admin	Tri-Buffered Aspirin	Major	250	Block
	Anonymous	B-ASPIRIN 81	Marlex Pharma	250	Block
	Raj Ahmed	Actrapid	Novorapid	250	Block
	Anonymous	Cefixime Tablets	Cefixime	250	Block
	Raj Ahmed	Napa Extra	Square	250	Block
	Anonymous	Linax Plus	IBN SINA	1050	Block
	Anonymous	Amoxicilline Sandoz	Sandoz	135	Block
	Anonymous	Zimax	Square	125	Block
	yash Rathore	PARACETAMOL	Demo	1	Block

**Figure 21 : Donation List**

## 5.2.22 Receiver List

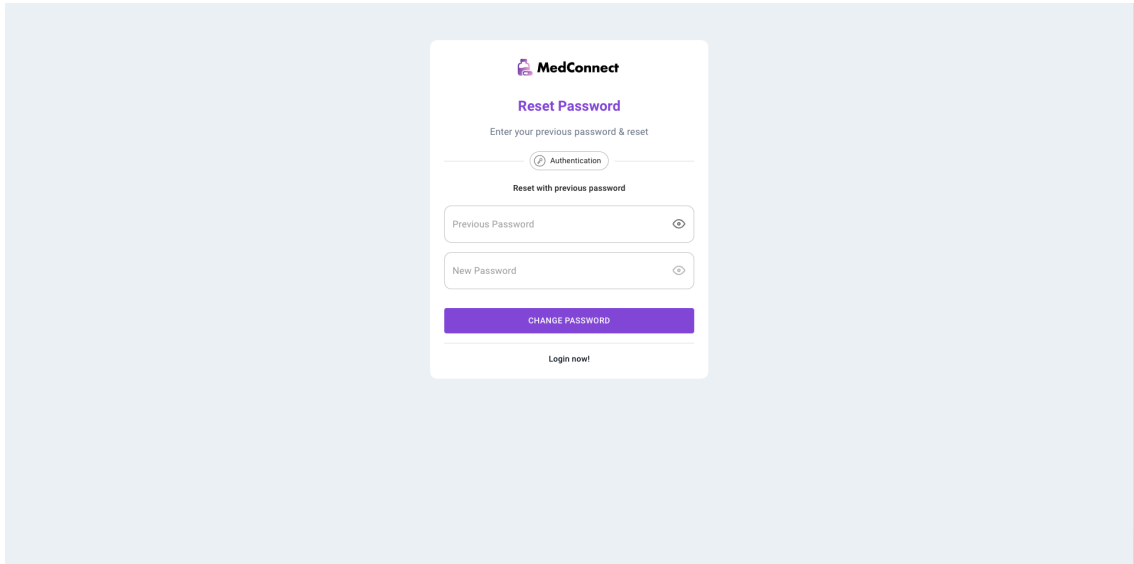
Admin can see receiver list here.

Avatar	Username	Role	Medicine	Total Received	Action
	Samir Joy	User	Napa Extra	100	Block
	Samir Joy	User	Napa Extra	10	Block
	> d	User	Esoral Mups 1	1	Block
	abcd 133	User	B-ASPIRIN 81	1	Block
	abc 123	User	Esoral Mups 1	1	Block
	A B	User	Esoral Mups 1	1	Block
	Md. Minhaz	User	Spiraxa	8	Block
	Md. Minhaz	User	Esoral Mups 1	6	Block
	Md. Minhaz	User	Esoral Mups 1	7	Block
	Md. Minhaz	User	Actrapid	30	Block
	Medi Admin	Admin	Cefixime Tablets	15	Block

Figure 22 : Receiver List

## 5.2.23 Reset Password

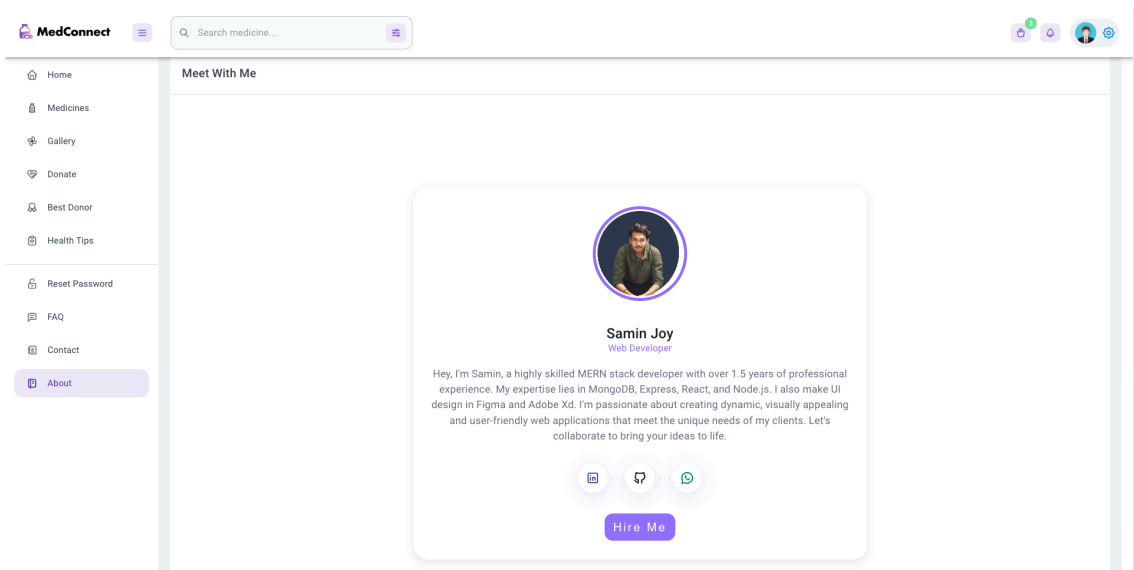
Admin and user both can reset password from here.



**Figure 23 : Reset Password**

### 5.2.24 Meet with me

Here is my professional info and my socials to connect with me for collaborative works.



### **5.3 Summary**

This chapter outlines the core features and functionalities of the MedConnect platform, designed to enhance user experience and ensure seamless interactions for all stakeholders, including donors, recipients, and administrators. Each feature, such as user registration, login, profile management, medicine applications, and donations, is tailored to meet the specific needs of the platform's users. Additional tools like the admin dashboard, FAQ, health tips, and gallery promote transparency, accessibility, and engagement. By providing intuitive interfaces and secure workflows, MedConnect simplifies the processes of donating, requesting, and managing surplus medications, making it an effective solution for bridging the gap between medication supply and demand.

## **Chapter 6 Project Summary**

### **6.1 Introduction**

The MedConnect project was designed to address the issues of medication waste and healthcare inequity by creating a secure, user-friendly platform that connects donors with surplus medications to recipients in need. Through a range of features such as donation management, medication requests, and health tips, the platform facilitates efficient redistribution of resources while ensuring compliance with data privacy and regulatory requirements. This chapter reflects on the project's limitations, scope, future opportunities, and overall outcomes.

## 6.2 Project Limitation

Despite the successful implementation of MedConnect, there were some limitations encountered during the development process:

**Time Constraints:** Limited time restricted the inclusion of advanced features, such as predictive analytics for medication demand and integration with external healthcare systems.

**Budget Restrictions:** Financial constraints limited the ability to invest in additional resources for testing and infrastructure scalability.

**Technology Constraints:** While the platform uses advanced tools and frameworks, certain functionalities like multilingual support and offline access were not fully developed due to the project timeline.

**Unaddressed Requirements:** Features such as automatic delivery tracking for donated medications and AI-powered recommendation systems were identified as valuable but left unimplemented in this phase.

These limitations provide areas for further improvement in future iterations of the platform.

## 6.3 Scope

The scope of MedConnect includes the core functionalities necessary to facilitate the donation and distribution of medications.

### **Key Features:**

**User Management:** Registration, login, profile updates, and logout for donors, recipients, and administrators.

**Medication Management:** Listing, searching, and applying for medications.

**Admin Controls:** A dashboard for monitoring donations, verifying users, and managing the system.

**Health Tips:** Providing valuable information to educate users on proper medication use and overall wellness.

**Notifications:** Real-time updates on donation and request statuses.

### **Boundaries:**

The project does not handle physical transportation of medications, relying on users to manage logistics.

Quality assurance of donated medications is excluded from the platform, requiring users to adhere to local healthcare guidelines.

Advanced features such as multilingual support, predictive analytics, and automated delivery systems are beyond the current scope but may be added in future updates.

## **6.4 Future Work**

To enhance the functionality and reach of MedConnect, several improvements and additional features are proposed for future development:

**Integration with Logistics Services:** Enable automated tracking and transportation of medications to ensure safe and timely delivery.

**AI-Powered Recommendation System:** Introduce AI to predict user needs and suggest relevant medications or health tips.

**Multilingual Support:** Expand the platform's accessibility by offering language options for users in diverse regions.

**Advanced Analytics:** Implement features to analyze donation trends and medication demand, aiding in better resource planning.

**Mobile Application:** Develop a dedicated mobile app to enhance usability and accessibility for all users.

**Offline Access:** Introduce offline functionality to allow users in remote areas to interact with the platform without constant internet connectivity.

## **6.5 Conclusion**

The MedConnect platform successfully addresses the critical issues of medication waste and lack of access by creating a centralized, efficient system for medication donations and requests. Key achievements include the development of a secure platform with user-friendly interfaces and a comprehensive set of features tailored to the needs of donors, recipients, and administrators. The project highlights the importance of leveraging technology to solve pressing societal problems and demonstrates the potential for further growth and innovation. Lessons learned include the value of user feedback, the need for robust security measures, and the importance of scalability in system design. MedConnect represents a significant step toward bridging the gap in healthcare access and improving resource management in the pharmaceutical sector.

## Appendix A

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