Riphah International Unversity Gulberg Greens Islamabad

Online Mediequipt Donation System

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Submitted To: Mam Kousar Naseer

MediEquipt Donation

Dedication/Acknowledgment

Thanks to Allah Almighty who made us able to complete this final project report of Software Construction Development. Also, our course teacher guided us in this project. All the members of the team worked hard and diligently to complete this project

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Artifact-1

Problem Statement/Project Proposal

Project proposal:

Project Proposal Project Title: Online Medicine Donation System (MediEquipt Donation)

Description:

In recent years, the purchase of medicines has become too difficult for the disadvantaged. The cost of medicine is too expensive. On the other hand, a rich person may buy medicine to cure his illness, but some of it will remain unused until its expiration date, before finally throwing it in the trash. As we know Pakistan is a poor country. People cannot easily afford medicine in this era of cost. So we provide a platform where rich people can donate medicines to poor people or organizations that will use the medicines for the benefit of society.

An online medicine donation system involves some basic processes like ordering and inventory management, generating sales reports, generating receipts, etc. Manually managing all such details is quite a challenging task for the workers as it puts pressure on them and thus compromises the efficiency of the system. Also, if any customer needs the products urgently, he has to visit the store and check the availability, which is just a waste of time. In addition, the timely provision of medicines is often one of the main factors in saving lives, but it is very difficult to find and verify their availability manually. Generating receipts then takes a lot of time for both customers and sellers. Moreover, it is a very time-consuming process for the workers to maintain all the sales and stock details manually and there are many chances for errors and mistakes. To deal with all these problems, we will develop a system that will automate all these processes.

Mediequiptment online donation system is a software application designed specifically for customer convenience. Customers can donate unused or unneeded medications and equipment's that are in need. It provides a safe and convenient way for individuals to donate their medication/equipment while ensuring the safety of recipients. This will save a lot of their precious time. The system will also facilitate the work of store employees. By leveraging technology, these platforms can help reduce waste and increase access to essentials that improve health outcomes for individuals who might not otherwise have access to these critical resources.

Artifact-2

Actor goals list

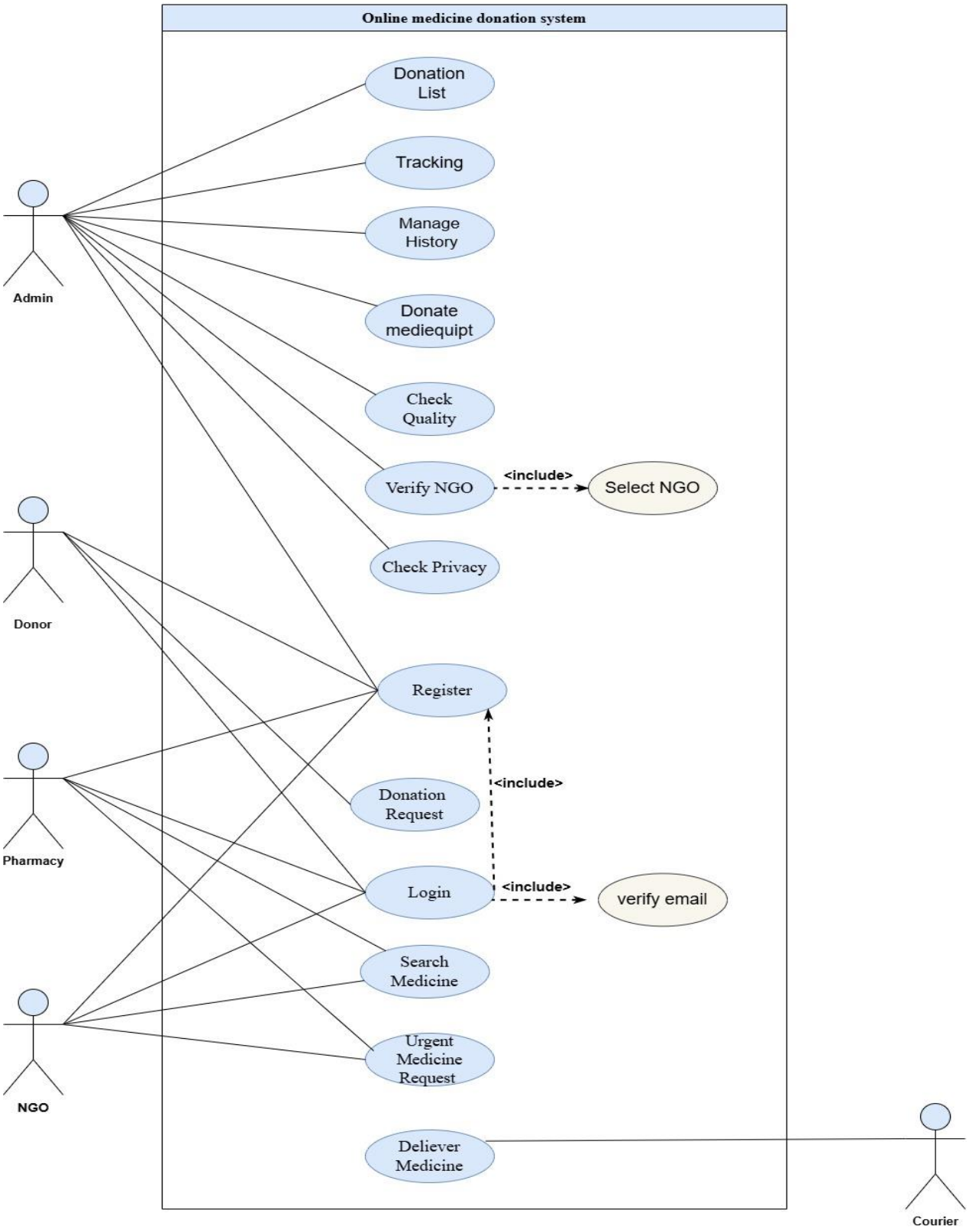
Use case diagram

Fully dressed format use cases

Actor and their goals:

Actor	Goal	Actor	Goal
Donor	1.Register 2.Donate mediequipt. 3. Login 4.View needed equipment.	Courier	1.Deliver medicine 2.Check Status
Admin	1.Manage Inventory. 2. Verify medicine 3.Register. 4.Track request.	Donny(user)	1.Register. 2. Login. 3.Request for mediequiptment. 4.View available donations. 5.Track request. 6. Search medicine Equipment.

Use Case Diagram:



Fully dressed format:

Manage Inventory UC-01:

Section	Content
Name	Manage Inventory
Scope	Online Mediequipt Donation System
Level	User Goal
Primary Actor:	Admin
Stakeholders and interests:	Admin, donor, Donny, courier
Preconditions:	Admin should be logged in into the administration panel.
Success Guarantees:	Inventory management process is completed accurately.
Main Success:	1.System displays the option of manage Inventory. 2.Admin selects manage Inventory option. 3.The system displays an overview of the current inventory, including the names of items, quantities, and their stock status 3. The Admin can change the stock status of the item, indicating whether it's in stock, out of stock, or any other relevant status. 4. The system confirms the successful update of the item's quantity and status, and the updated information is reflected in the inventory records.
Extensions	4(a)The system could miss confirming the Admin's changes, causing a possible mismatch between what the Admin wanted and what's actually stored in the inventory.
Special Requirements:	1.Data security measure should be in place to protect sensitive information. 2.The system saves the record upon every update.
Technology and data Variations List:	1.Different database and formats are used to store the inventory record.
Frequency of Occurrence:	Once with one account
Trigger Event:	New inventory record is added or existing record is updated.

Verify Medicine UC-02:

Section	Content
Name	Verify Medicine
Scope	Online Mediequipt Donation System
Level	User Goal
Primary Actor:	Admin
Stakeholders and interests:	Admin, donor, Donny, courier
Preconditions:	Admin has successfully log into the system
Success Guarantees:	Admin can easily assess the quality of donated medicines.
Main Success:	1.Admin starts the medicine verification process. 2.The system shows a menu with different options. 3.The Admin chooses to verify medicines from the menu. 4.The system displays all the necessary information about the medicines, including their names and formulas. 5.The Admin carefully checks each medicine's formula and expiration dates to ensure they are suitable for donation.
Extensions	5(a) If expiry dates are not visible on the medicine the admin will reject those medicines.
Special Requirements:	1. Ensure that the system remains stable and functions consistently without unexpected crashes or error.
Technology and data Variations List:	1. Different database are used to store the data of medicine.

Frequency of Occurrence:	More than one account.
Trigger Event:	When new medicine is added to the inventory, updated, or removed due to expiry or stock depletion.

Register UC-03:

Section	Content
Name	Register
Scope	Online Mediequipt Donation System
Level	User Goal
Primary Actor:	Admin, Donny, Donor
Stakeholders and interests:	Admin, donor, Donny, courier
Preconditions:	Users have been granted access to the registration page
Success Guarantees:	User should be able to register their account successfully
Main Success:	1.User should enter their email, password and reenter the password. 2.The system will verify the system and send a verification code through email. 3.The user will open their Gmail account and click on the verification email. 4.The system will automatically authenticate the user through their Gmail account. 5.The user will successfully register into the system

	6.The system will save the user account information in the database and will display the dashboard.
Extensions	2(a).If user entry incorrect email and password system will display an error message.
Special Requirements:	The system should be available 24 hours.
Technology and data Variations List:	Ensure high availability, usability and effective error handling in the registration process, including the options for the users to register through social media accounts and implement captcha for security purpose.
Frequency of Occurrence:	Once with one account.
Trigger Event:	When a new user or transaction is registered, updated, or deleted from the system.

Donate Medicine Equipment UC-04:

Section	Content
Name	Donate medicine Equipment
Scope	Online Medicine Donation System
Level	User Goal
Primary Actor:	Donor
Stakeholders and interests:	Admin, donor, Donny, courier
Preconditions:	User must have account in the system.
Success Guarantees:	Donors successfully donate medical equipment.

Main Success:	1.Donor enters correct username and password and login into the system with stable internet connection. 2.The system authenticate the donor and display the main page. 3.The Donor selects the “donate mediequipt “option.
	4.The Donor specifies the type of equipment they want to donate. 5.The system displays a confirmation screen with the selected equipment type. 7. Donor confirms the equipment selection. 8.The system then requests the donor to enter address, phone number and name. 9.The Donor enters the required contact details. 10The system validates the accuracy of the contact details provided by the Donor. 11.The system sends a confirmation message to the Donor via email or phone number. 12.The Donor receives the confirmation message. 13.The system processes the donation and records it in the system.
Extensions	1(a). If the Donor enters incorrect username and password the system will display an error message. 7(a). If the Donor decides not to proceed with the donation the system will allow the Donor to cancel the donation. 10(a). If the system cannot validate the accuracy of the contact details the system will display an error message. 11(a). If the Donor enters an incorrect email or phone number, the system should not send a confirmation message. 13(a). If the system encounters a problem during the donation processing or recording the system notifies the Donor that the donation could not be processed.
Special Requirements:	1.The system should be user-friendly for donors. 2.Security measures should protect user data.
Technology and data Variations List:	1.The system should support various data formats and technologies. 2.Verification through email
Frequency of Occurrence:	This scenario can occur frequently as donors make contributions to the organization.

Trigger Event:	When a donation request is initiated, approved, or completed for medicines or medical equipment.

Track Request UC-05:

Section	Content
Name	Track request
Scope	Online Medicine Donation System
Level	User Goal
Primary Actor:	Admin, Donny
Stakeholders and interests:	Admin, donor, Donny, courier
Preconditions:	User must have account in the system.
Success Guarantees:	User can see the current status and location of the mediequipt package.
Main Success:	1.User enters correct username and password and login into the system with stable internet connection. 2.The system checks that user enter correct details and display main page. 3.The Donny selects the “Track request “option. 4.The Donny will enter the tracking id. 5.The system validates the entered tracking ID to confirm that it exists in the system's records and corresponds to an actual medical equipment shipment. 6.If the tracking information is valid the system will display the current status and location of medicine. 7.The Donny is presented with detailed tracking information.
Extensions	5(a). If user enters incorrect username and password the system may display an error message and allow the user to retry. 5(b). In case the tracking ID format is incorrect or does not match the expected format, the system informs the user with an error message and provides an option to re-enter the tracking ID with the correct format.
Special Requirements:	The system must have strong security measures to protect tracking data and system should be able to handle a specified number of concurrent donnys.

Technology and data Variations List:	1. Different data formats used for tracking details. 2. Different sensors are used. 3. Tracking through GPS.
Frequency of Occurrence:	Tracking request occur frequently as customers track their mediequipt package
Trigger Event:	When a new request is submitted, updated, or status is changed (e.g., from pending to completed) in the tracking system.

View needed equipment UC-06:

Section	Content
Name	View needed equipment
Scope	Online Mediequipt System
Level	User goal
Primary Actor:	Donor
Stakeholders and interests:	Admin, donor, courier, Donny
Preconditions:	The donor must be logged into the Online Mediequipt System with the appropriate credentials.
Success Guarantees:	The donor is equipped with the necessary information to make an informed decision regarding their contribution to providing the required medical equipment.
Main Success:	1.Donor will log into the system using their unique credentials. 2.The system will present a list of needed medical equipment categorized by urgency and type. 3.Donor will select a specific category or item to view more details about the required equipment. 4.System will provide comprehensive information about the equipment, including its purpose, quantity needed, and any specific requirements or preferences indicated by the Donny. 5.Donor will decide to contribute by providing the required equipment.
Extensions	4a. If there are any specific instructions for donation, the system displays the relevant information for the donor to follow while contributing the equipment.

Special Requirements:	1.The system must have a secure login process for donors to access information about needed medical equipment. 2.Comprehensive categorization and listing of the required medical equipment for easy navigation and understanding for the donor.
Technology and data Variations List:	1.Support for different device types and screen sizes for optimal accessibility for the courier.
Frequency of Occurrence:	Donors may view the list of needed equipment multiple times to explore different opportunities for contributing to the mediequipt system.
Trigger Event:	When a request is made to view the list of required equipment, or when equipment status is updated

Login UC-07:

Section	Content
Name	Login
Scope	Online Medicine Donation System
Level	User Goal
Primary Actor:	Donor , Donny
Stakeholders and interests:	Admin, donor, Donny, courier
Preconditions:	User must have account in the system.
Success Guarantees:	User should login successfully in his/her account
Main Success:	1.When users want to access the system, they go to the login page. 2.Users provide their unique username and password in the designated fields. 3.The system checks if the provided username and password is strong and correct. 4.The system sends a one-time verification code to the user's registered email or mobile number. 5.Users receive the verification code and enter it into the system to confirm their identity. 6.The user will login successfully into the system. 7.The system will successfully save users information in database.
Extensions	2(a) If user enters incorrect username and password the system may display an error message and allow the user to retry. 4(a). If the Donor enters an incorrect email, the system should not send a confirmation message.
Special Requirements:	1.Security measures should protect user data. 2.Add a captcha challenge to the login page to ensure that the login attempt is made by human and not an automated script.
Technology and data Variations List:	1.The system should support various data formats and technologies. 2.Verification through email

Frequency of Occurrence:	As many times as user want to login into the system
Trigger Event:	When a user successfully logs in or fails to log in (incorrect credentials, account lock, etc.).

Search Medicine Equipment UC-08:

Section	Content
Name	Search medicine Equipment
Scope	Online mediequipt donation system
Level	User Goal
Primary Actor:	Donny
Stakeholders and interests:	Admin, donor, Donny, courier.
Preconditions:	Donny must be logged in to the system
Success Guarantees:	Donny receive accurate search result for the requested medicine equipment.
Main Success:	1.Dony successfully initiates a search for specified medical equipment or medicine provides relevant criteria. 2.The system processes the search request, retrieves a list of matching medical equipment or medicines and also displays the result to Donny for further action.
Extensions	2(a)If no matching equipment or medicines is found the system notifies dony accordingly.
Special Requirements:	The search tool needs to follow very strict rules about keeping things safe and private especially when it comes to sensitive medical information.
Technology and data Variations List:	The medical equipment and medicine data is stored in the systems database.
Frequency of Occurrence:	Depends on dony needs to search for medical equipment or medicines.
Trigger Event:	When a user searches for specific medicine or medical equipment in the system (e.g., by name, type, or category).

View available donations UC-09:

Section	Content
Name	View available donations
Scope	Online mediequipt donation system
Level	User Goal
Primary Actor:	Donny
Stakeholders and interests:	Admin, donor, Donny, courier.
Preconditions:	Donny must be logged in to the system
Success Guarantees:	Donny receives an accurate list of available donations that match their request.
Main Success:	1.Donny successfully navigates to the "View Available Donation" section. 2. The system retrieves and displays a list of matching available donations.
Extensions	2(a)If no matching equipment or medicines is found the system notifies that stock is not available at that time.
Special Requirements:	Many medical equipment and supplies require a prescription or authorization This ensures that the equipment is appropriate for the patient's condition and is used safely.
Technology and data Variations List:	The medical equipment and medicine data is stored in the systems database.
Frequency of Occurrence:	Depends on Donny needs to search for medical equipment or medicines.
Trigger Event:	When a user queries or views the list of available donations (e.g., medicines, medical equipment, or funds) in the system.

Request for Mediequipt UC-10:

Section	Content
Name	Request for mediequipt
Scope	Online mediequipt donation system
Level	User Goal
Primary Actor:	Donny
Stakeholders and interests:	Admin, donor, Donny, courier.
Preconditions:	Donny must be logged in to the system
Success Guarantees:	Donny receive accurate result for the requested medicine equipment.
Main Success:	1.Donny successfully initiates a request for specified medical equipment or medicine. 2.The system processes the request, retrieves a list of matching medical equipment or medicines and also displays the result to Donny for further action.
Extensions	2(a)If no matching equipment or medicines is found the system notifies that stock is not available at that time.

Trigger Event:	When a user selects a medical equipment item from a list or inventory
Special Requirements:	Many medical equipment and supplies require a prescription or authorization This ensures that the equipment is appropriate for the patient's condition and is used safely.
Technology and data Variations List:	The medical equipment and medicine data is stored in the systems database.
Frequency of Occurrence:	Depends on dony needs to search for medical equipment or medicines.
Trigger Event:	When a user submits a request for medical equipment (Mediequipt), including details like quantity, type, and urgency.

Select mediequipt UC-11:

Section	Content
Name	Select mediequipt
Scope	Online mediequipt donation system
Level	User Goal
Primary Actor:	Dony
Stakeholders and interests:	Admin, donor, Donny, courier.
Preconditions:	Donny must be logged in to the system
Success Guarantees:	Donny successfully selects the desired medical equipment.
Main Success:	1.Dony logged in to the system, begins the process to select specified medical equipment. 2.The system presents Dony with a list of available medical equipment. Each items includes details such as name description, quantity and quality. 3.Dony carefully reviews the list and selects the specific medical equipment he/she needs. And also choose one or multiple items. 4.The system records dony selection ensuring that the chosen medical equipment is reserved this prevents other users from selecting the same items. 5.The system provides dony with a confirmation message that the selection has been recorded successfully.
Extensions	3(a)If Donny encounters an issue during the selection process, the system will provide an error message.
Special Requirements:	The system must ensure that selected medical equipment is reserved for dony until he/she completes the selection process.
Technology and data Variations List:	The medical equipment and medicine data is stored in the systems database.
Frequency of Occurrence:	The frequency of selecting medical equipment depends on dony specific needs.

Deliver medicine UC-12:

Section	Content
Name	Deliver Medicine
Scope	Online Mediequipt System
Level	User Goal
Primary Actor:	None
Secondary Actor:	Courier
Stakeholders and interests:	Admin, donor, courier, Donny
Preconditions:	1.The customer must have placed an order for medicine through the online system. 2.The courier must be available for delivery.
Success Guarantees:	1.The customer receives the ordered medicine. 2.The system updates the order status to "Delivered."
Main Success:	1.The customer places an order for medicine through the online medical equipment system. 2.The system verifies the availability of the ordered medicine and generates a delivery request. 3.The system assigns the delivery request to an available courier. 4.The courier receives the delivery request and contacts the customer to confirm the delivery details. 5.The courier picks up the medicine from the designated distribution center. 6.The courier delivers the medicine to the customer's specified delivery address. 7.The customer receives the medicine and confirms the delivery through the system. 8.The system updates the order status to "Delivered."
Extensions	3(a)If the courier is unavailable, the system reassigns the delivery request to the next available courier. 4(a)If the customer is unavailable during the initial delivery attempt, the courier follows a predefined process for redelivery or contact with the customer.
Special Requirements:	The system must have a secure login process for couriers to access delivery information.

Technology and data Variations List:	Support for different device types and screen sizes for optimal accessibility for the courier.
Frequency of Occurrence:	Couriers may perform medicine deliveries multiple times during their shift, depending on the number of scheduled deliveries
Trigger Event:	When medicine is dispatched or delivered to the intended recipient or location, including the update of delivery status and tracking information.

Check status UC-13:

Section	Content
Name	Check Status
Scope	Online Mediequipt System
Level	Sub Function
Primary Actor	None
Secondary Actor:	Courier
Stakeholders and interests:	Admin, donor, courier, Donny
Preconditions:	The customer must have placed an order through the online medical equipment system
Success Guarantees:	The customer receives real-time information on the status of their order.
Main Success:	1.The customer logs into their account on the online medical equipment system. 2.The system displays the customer's order history and an option to check the status of each order. 3.The customer selects the specific order for which they want to check the status. 4.The system retrieves real-time order status information from the database. 5.If the order is out for delivery, the system contacts the courier for the latest location and estimated delivery time. 6.The courier provides real-time updates on the order status to the system. 7.The system displays the updated order status, including any relevant tracking information, to the customer.

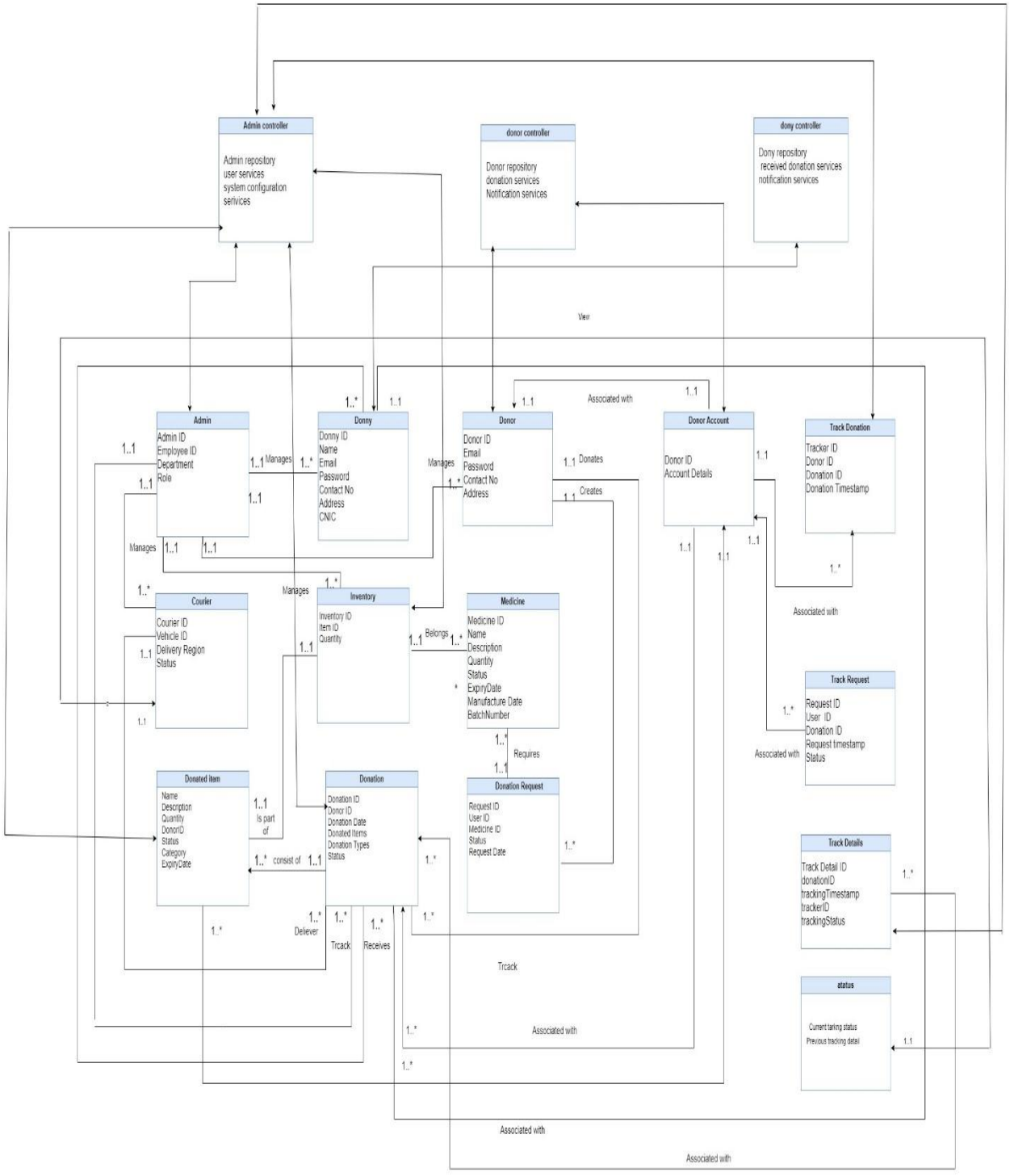
Extensions	2(a)If the courier is unavailable or unable to provide real-time updates, the system informs the customer about potential delays and suggests contacting customer support for further assistance. 3(a)If the customer has multiple orders, they can choose to check the status of each order individually.
Special Requirements:	1.The system must have a secure login process for couriers to access delivery information. 2.Real-time integration with the delivery tracking system to provide accurate and timely updates. 3.Proper error handling to manage any unforeseen errors during the status check process.
Technology and data Variations List:	1.Integration with the delivery tracking system for real-time updates and order status information. 2.Support for different device types and screen sizes for optimal accessibility for the courier.
Frequency of Occurrence:	Many times with one account.
Trigger Event:	When a user or system checks the status of an order, request, delivery, or inventory item

Artifact-3

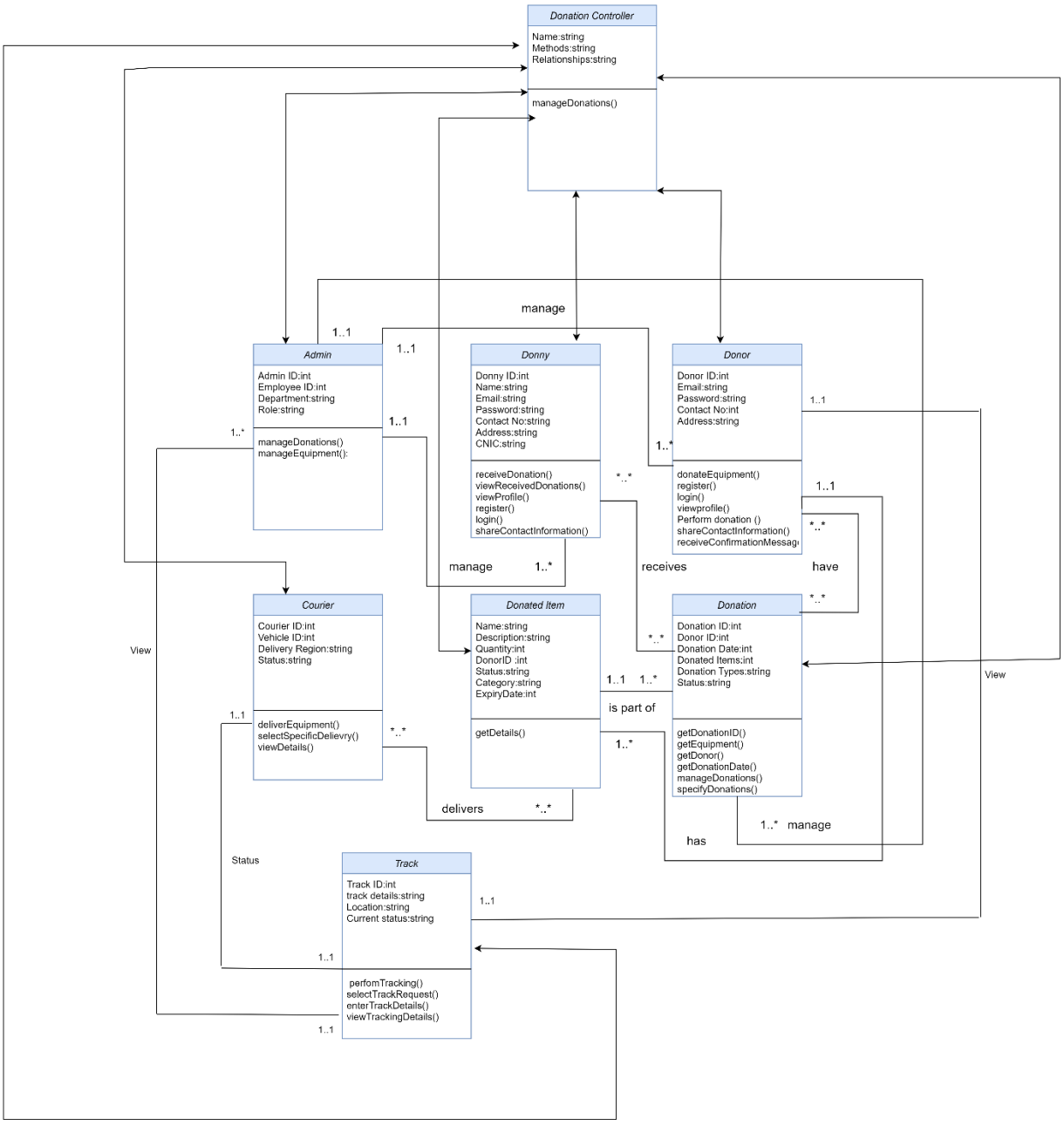
Class diagram

Domain Model

Domain model Diagram:



Class Diagram:

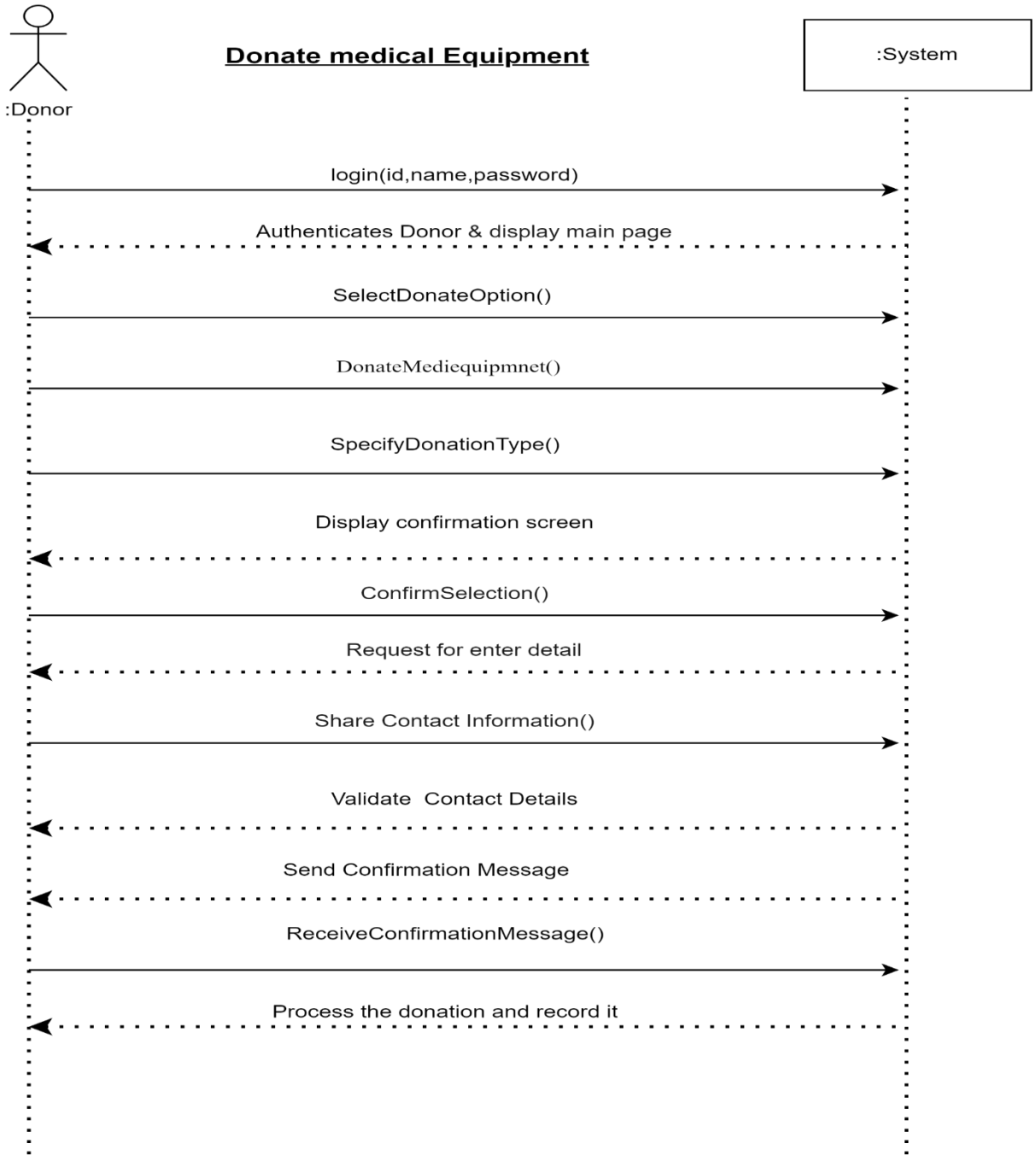


Artifact 04:

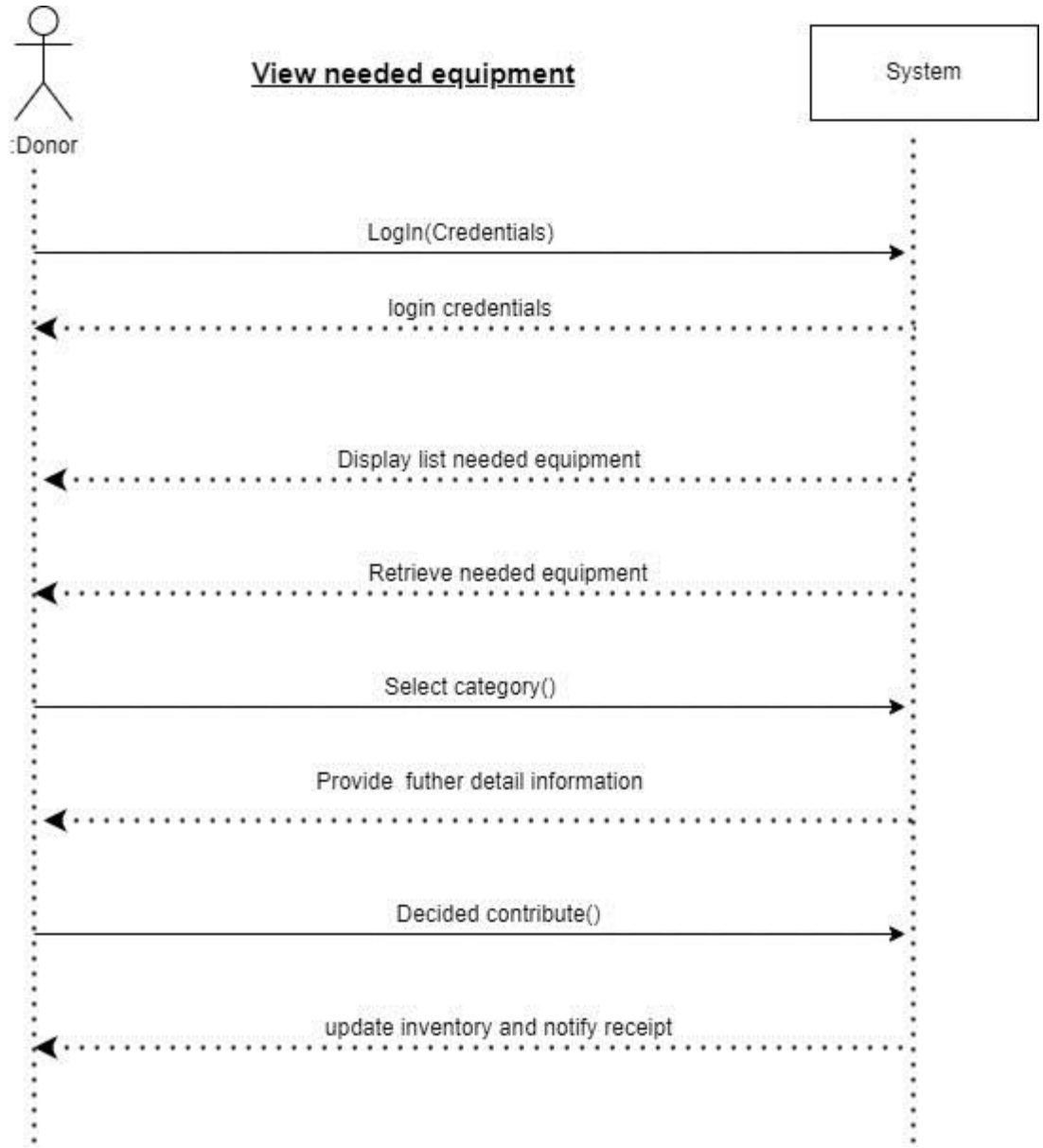
System Sequence

Diagram: System Sequence Diagram:

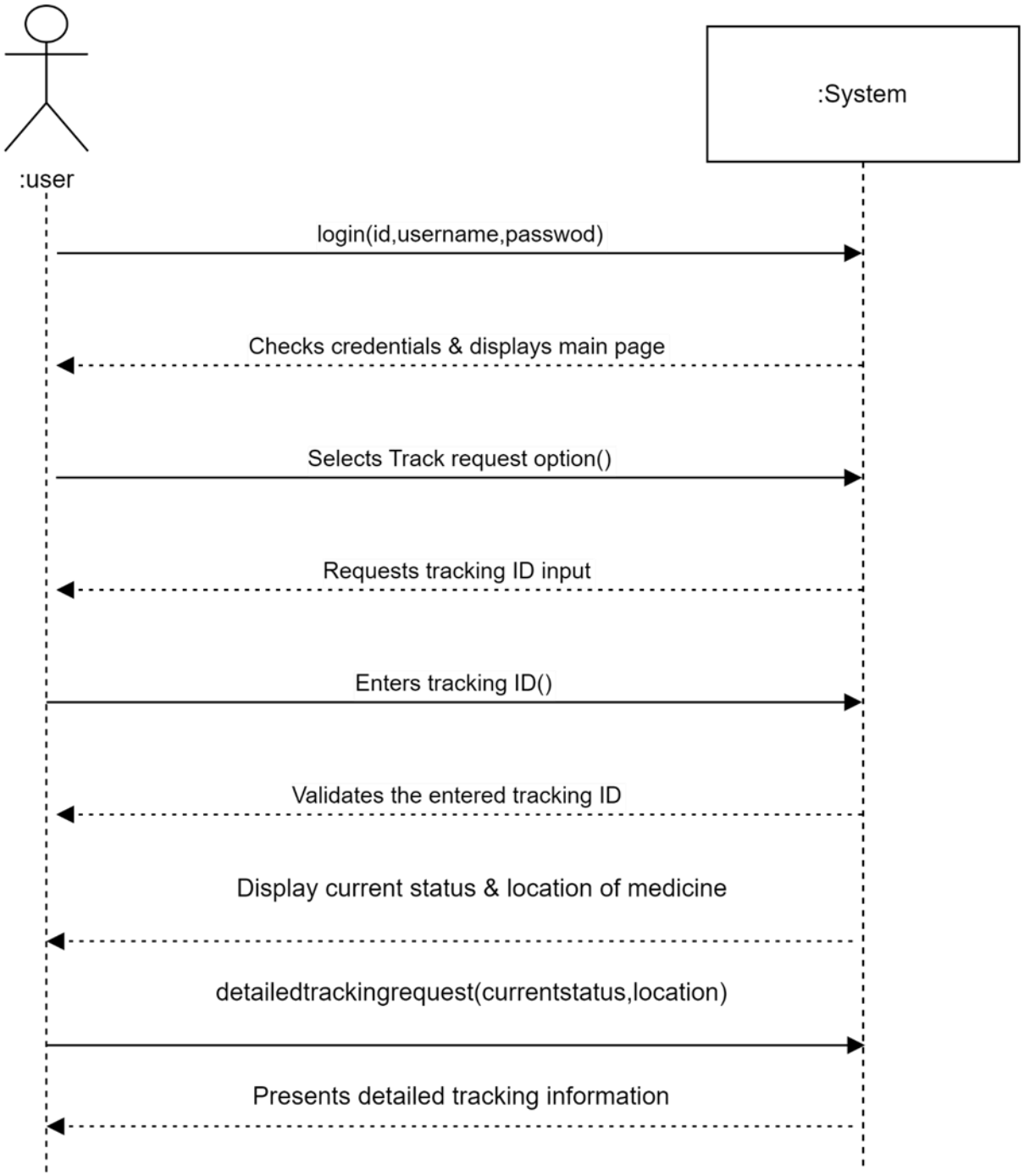
Donate medical Equipment:



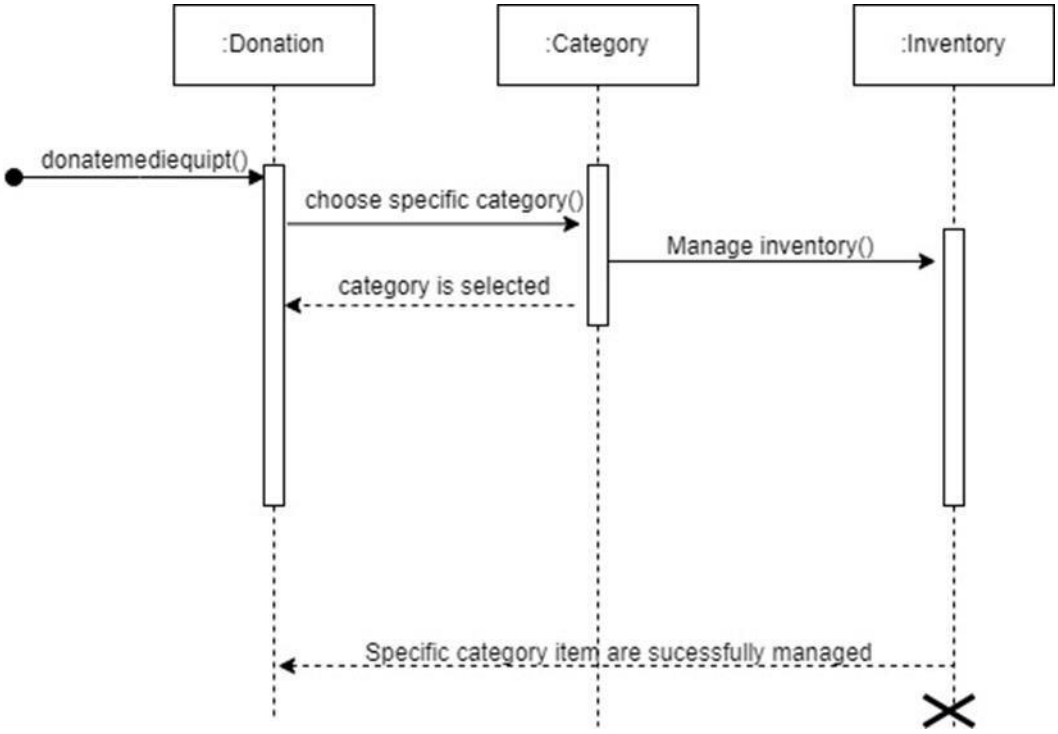
View needed equipment:



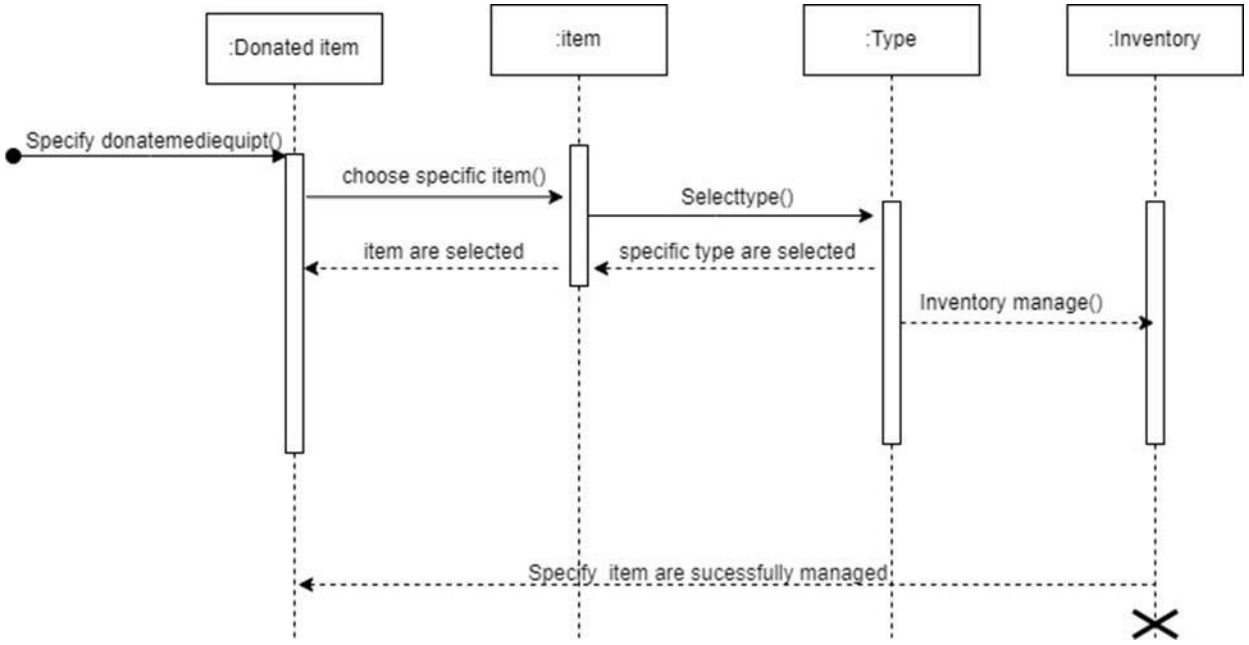
Track Request:



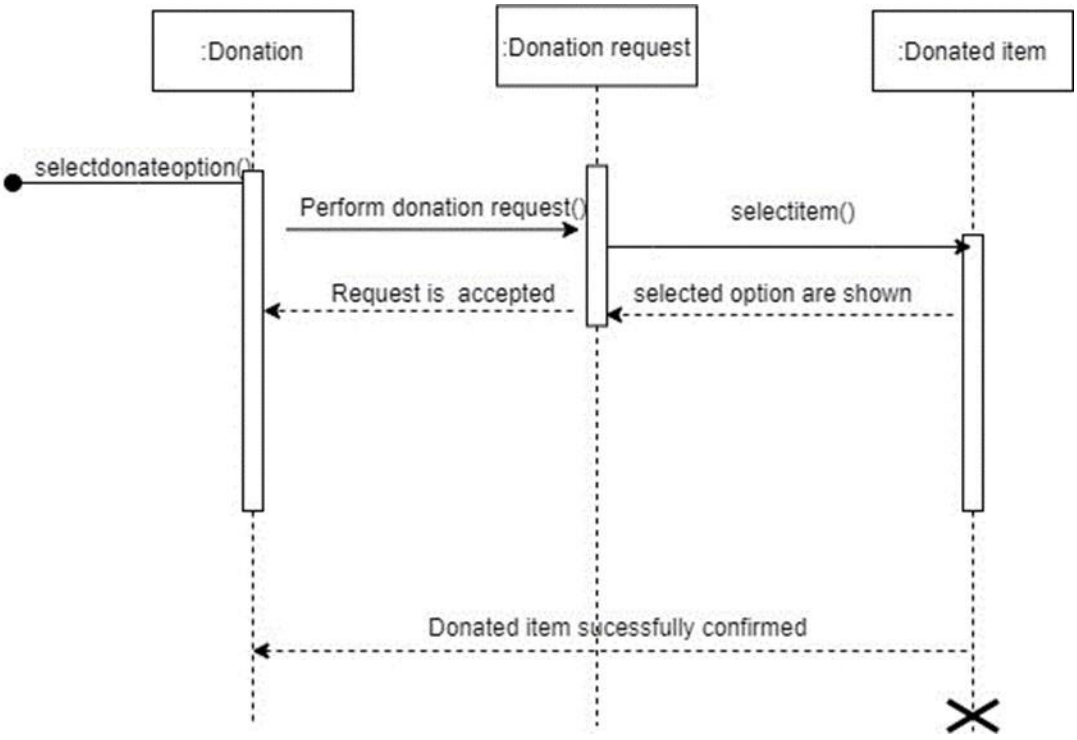
Donate mediEquipt:



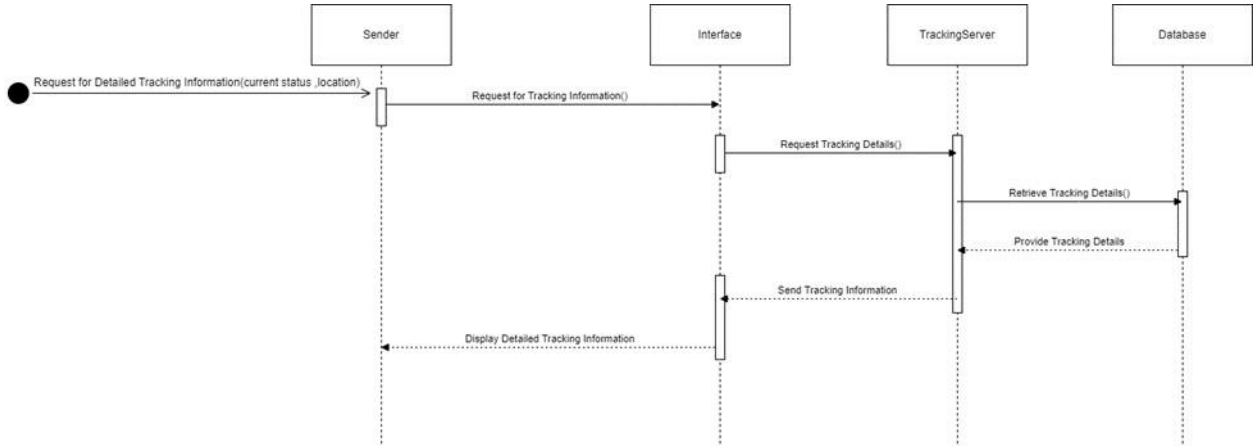
SpecifyDonationType:



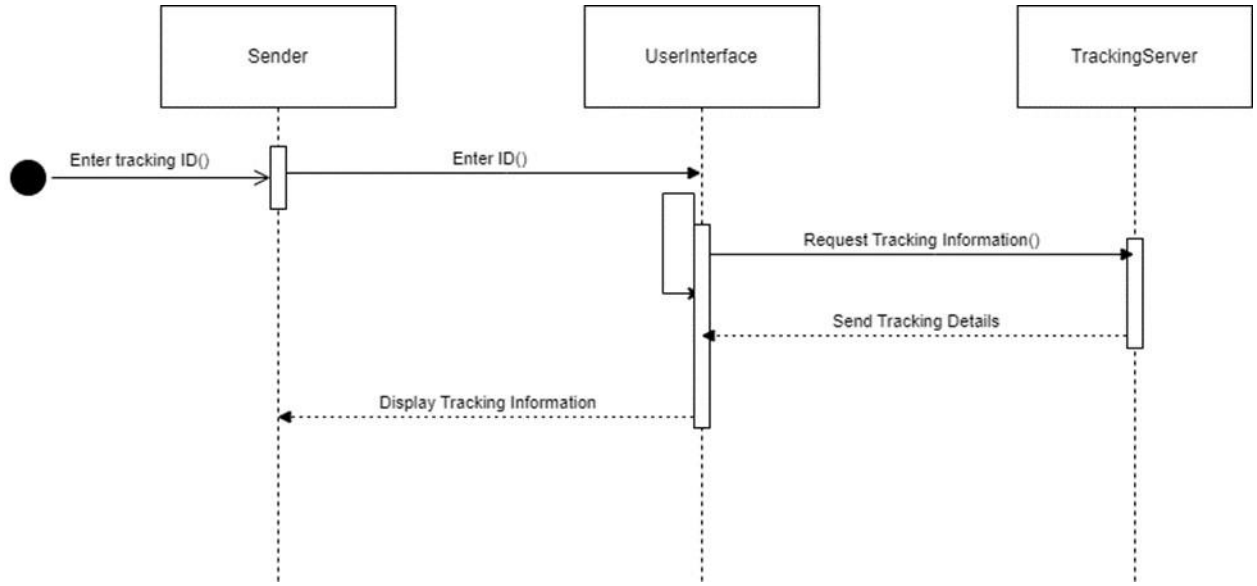
Selectdonateoption:



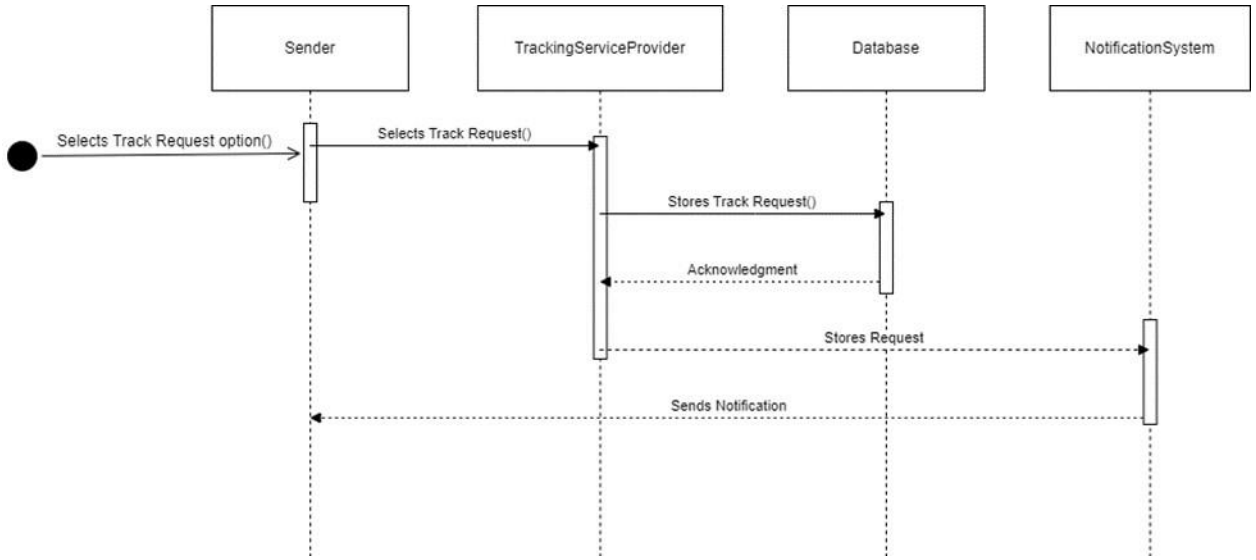
DetailTrackingRequest:



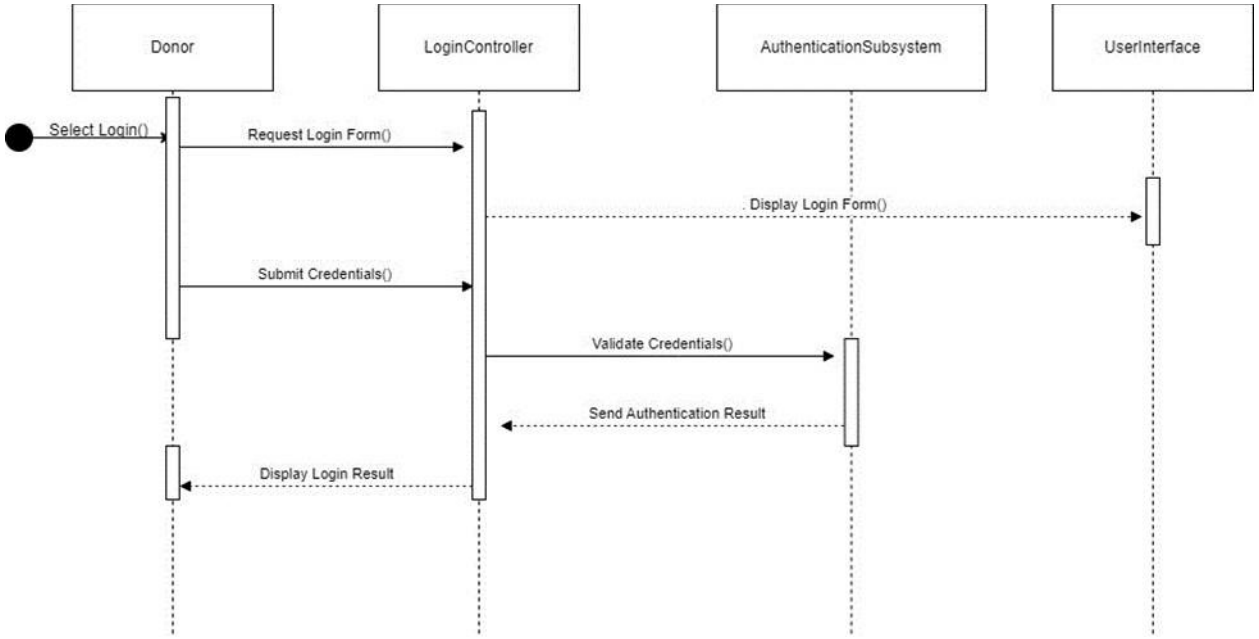
EnterTrackingID:



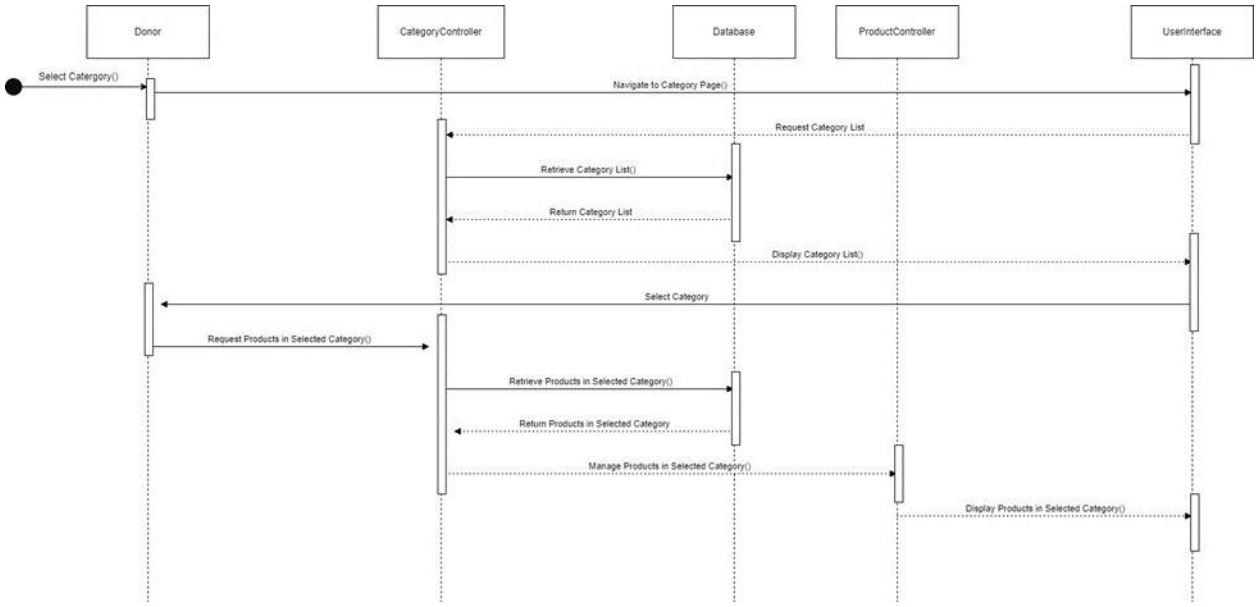
SelectTrackRequestOption:



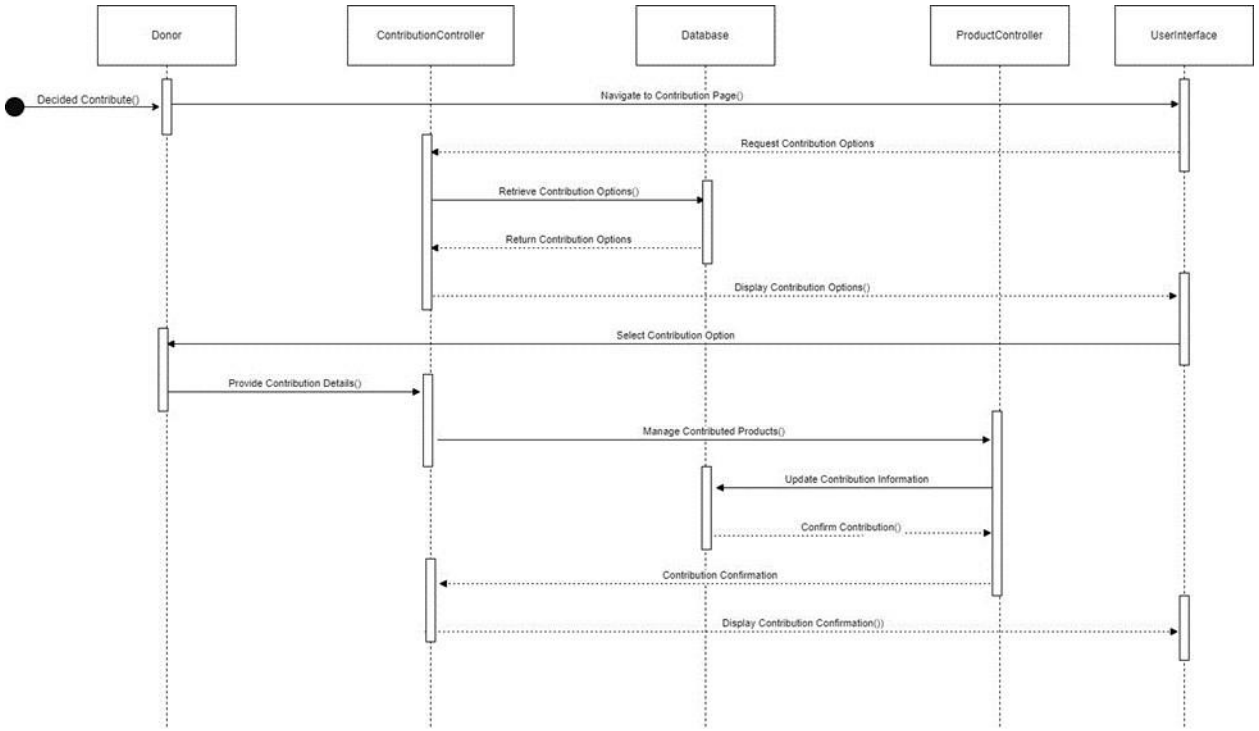
Select login:



Select category:



Decided contribute:



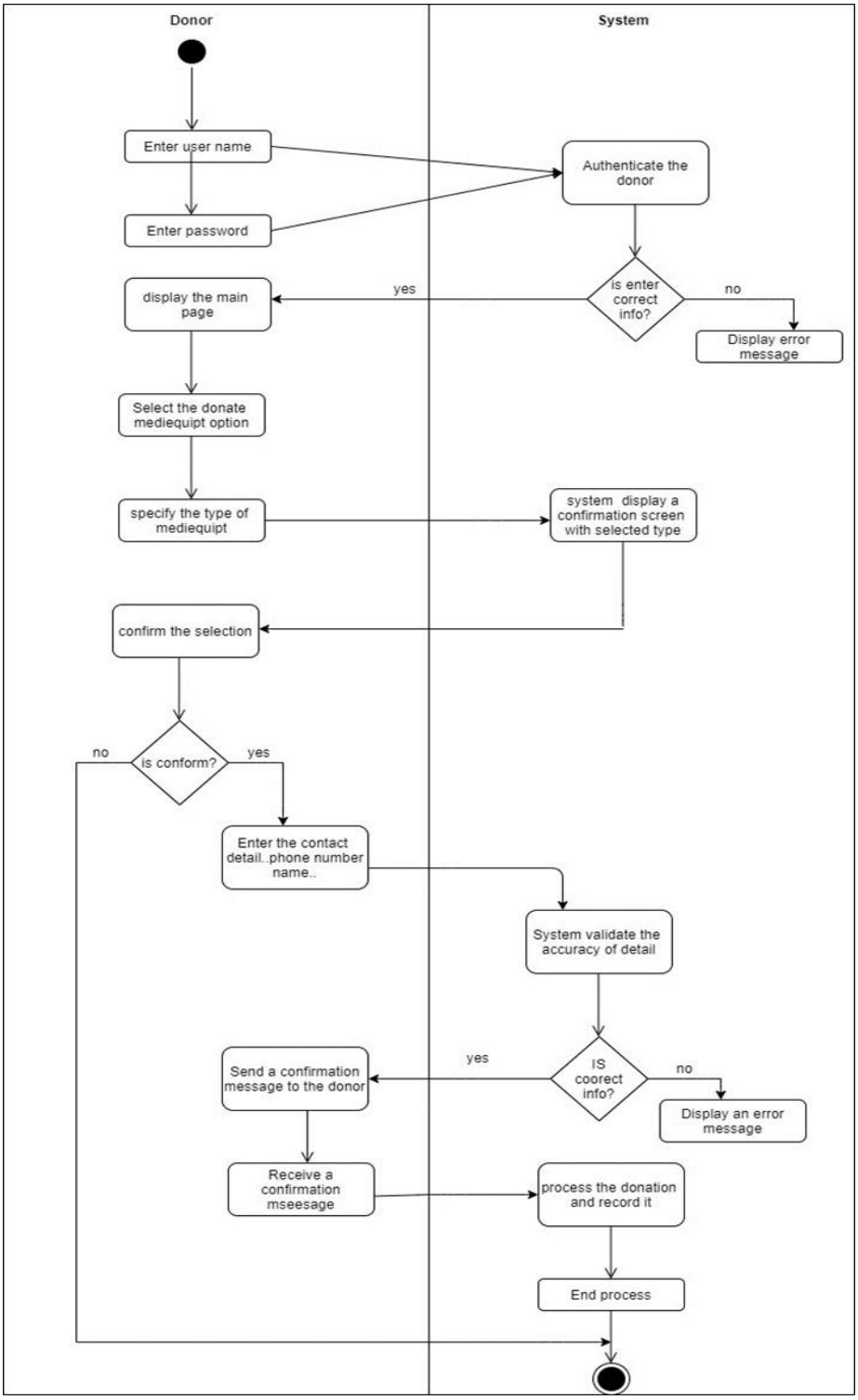
Artifact-5

State diagram

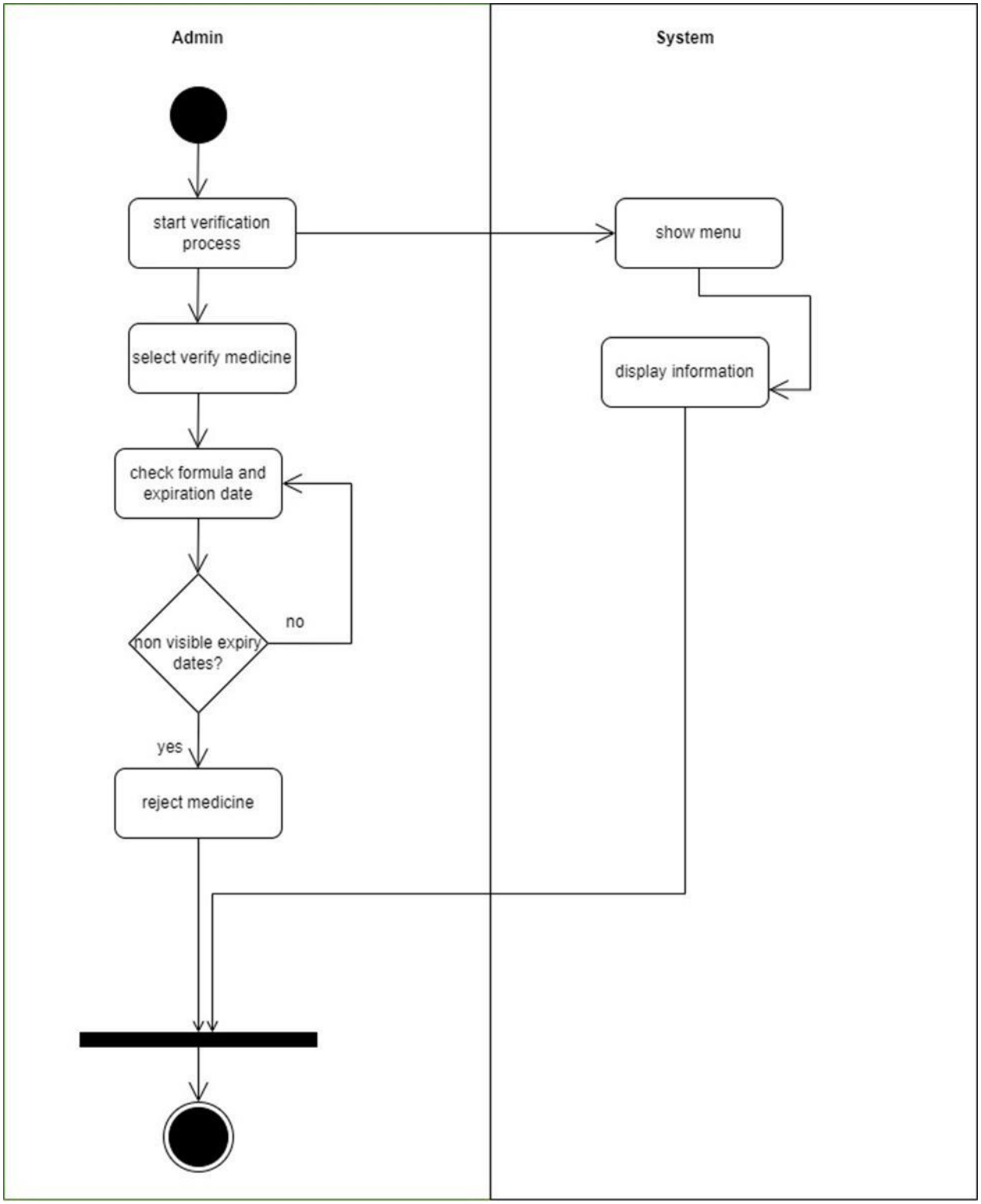
Activity diagrams

ACTIVITY DIAGRAM:

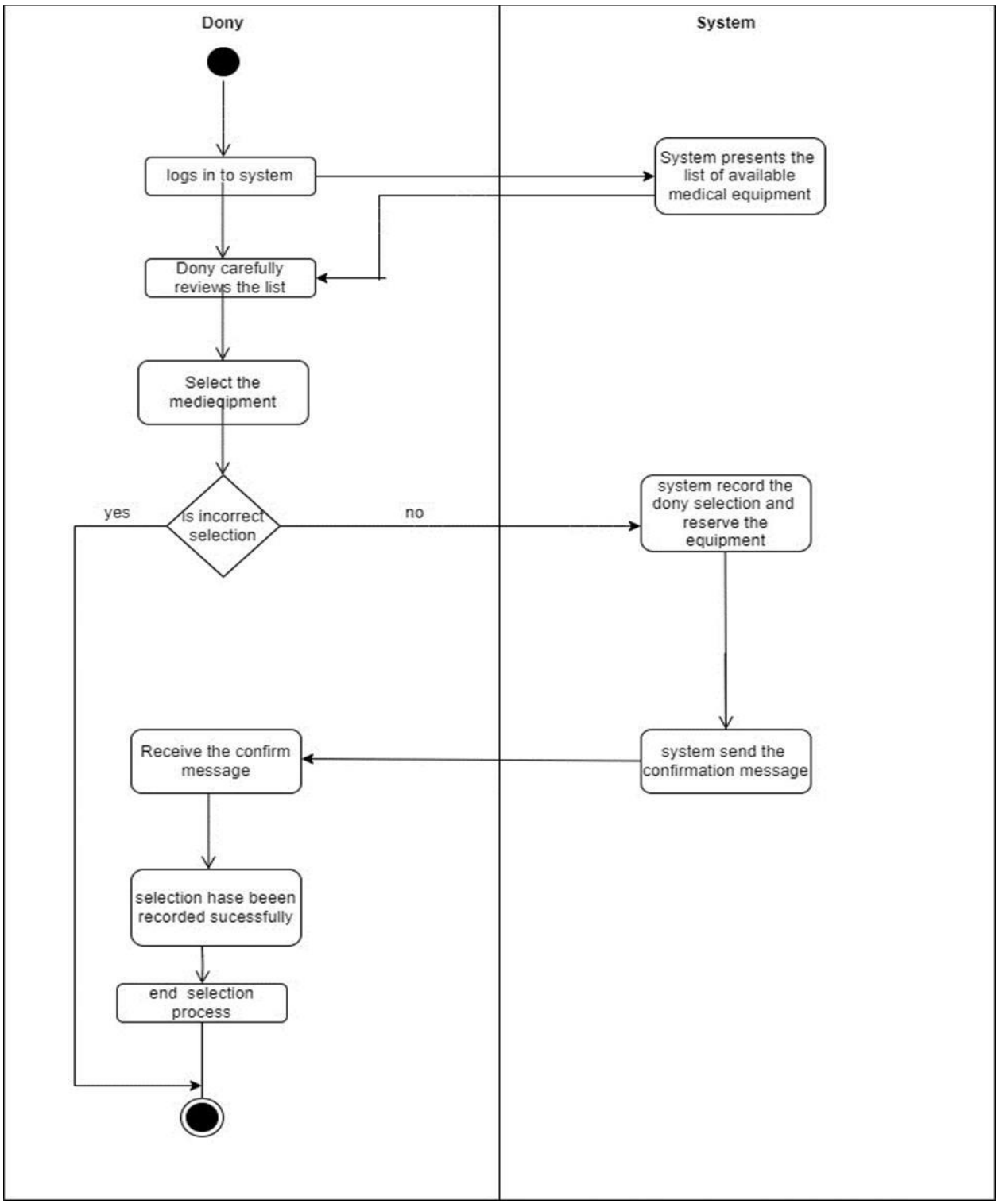
Donate medical equipment



Verify medicine:

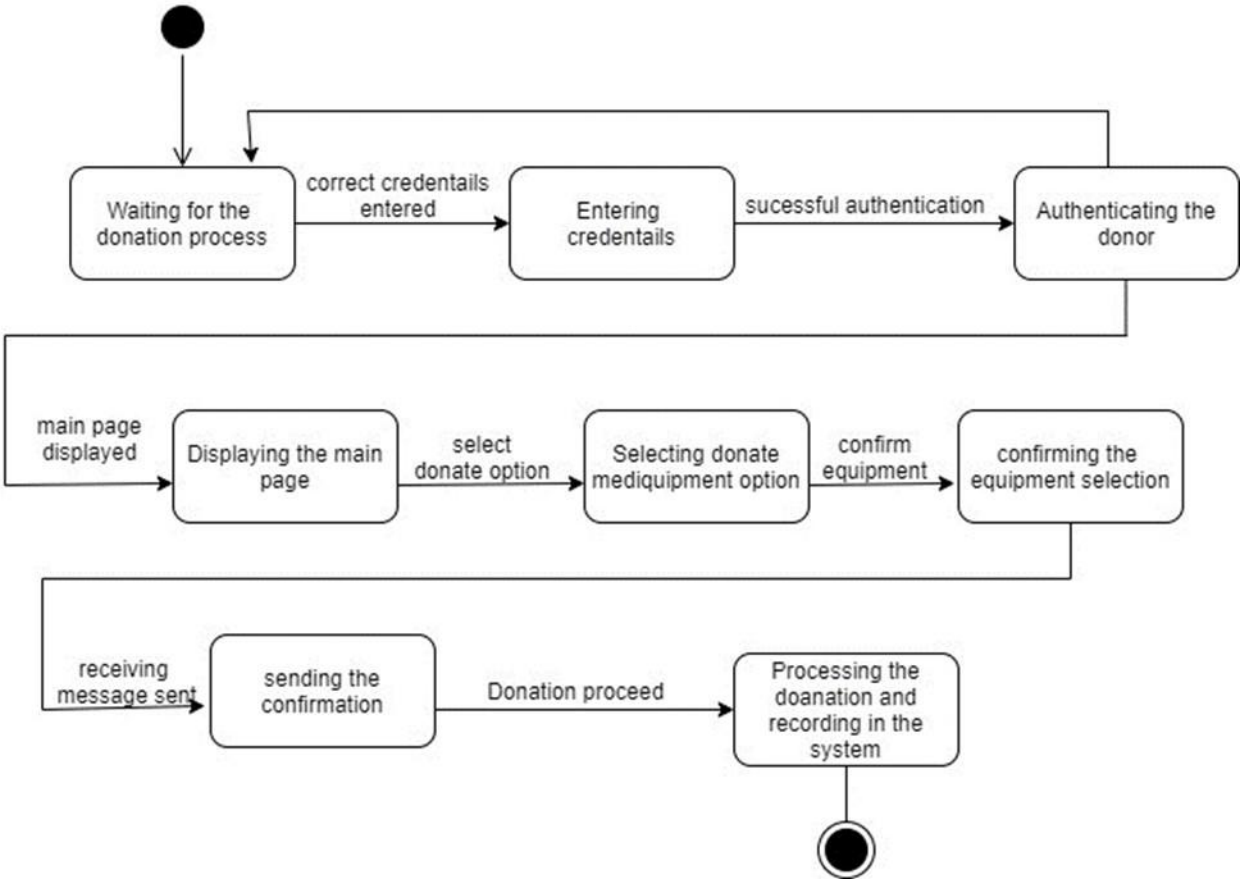


Select mediequipt:

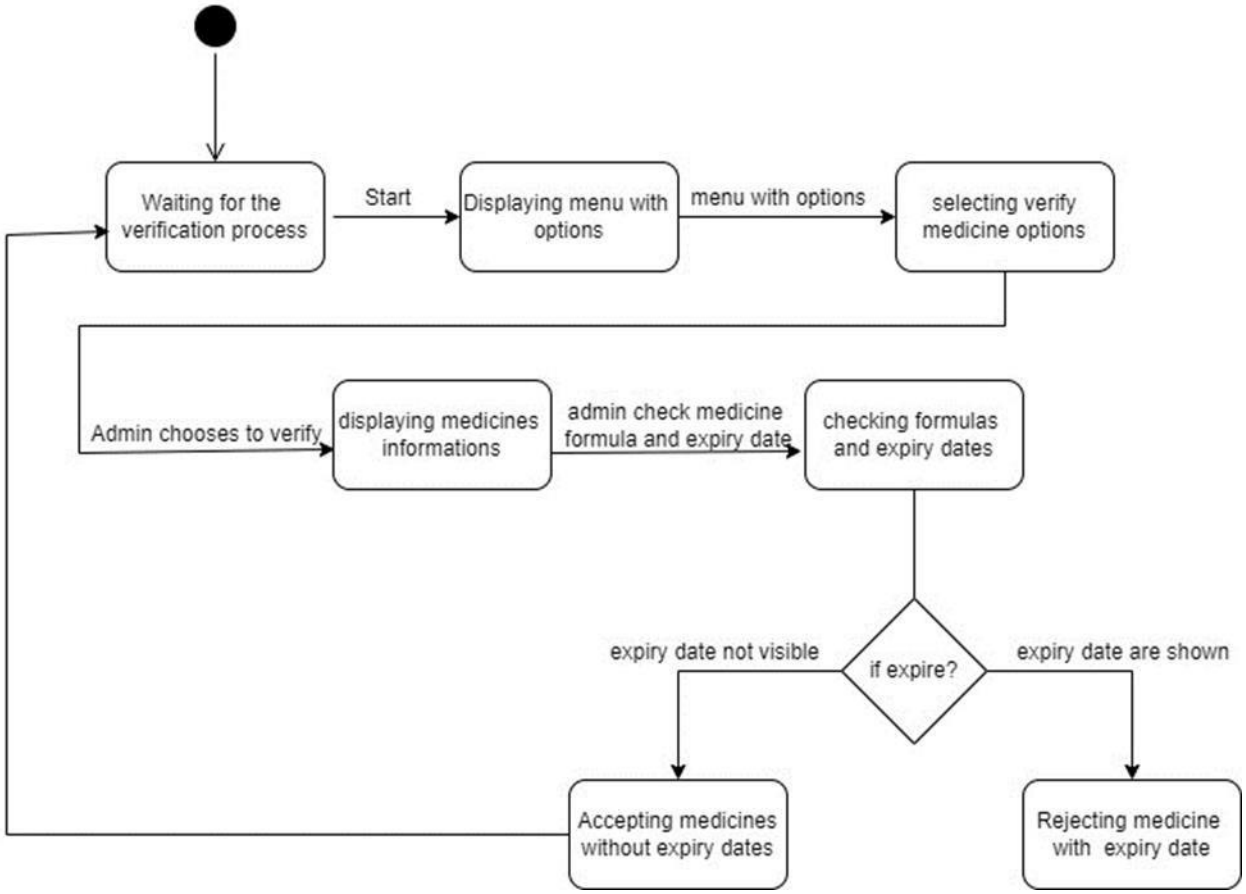


State diagram:

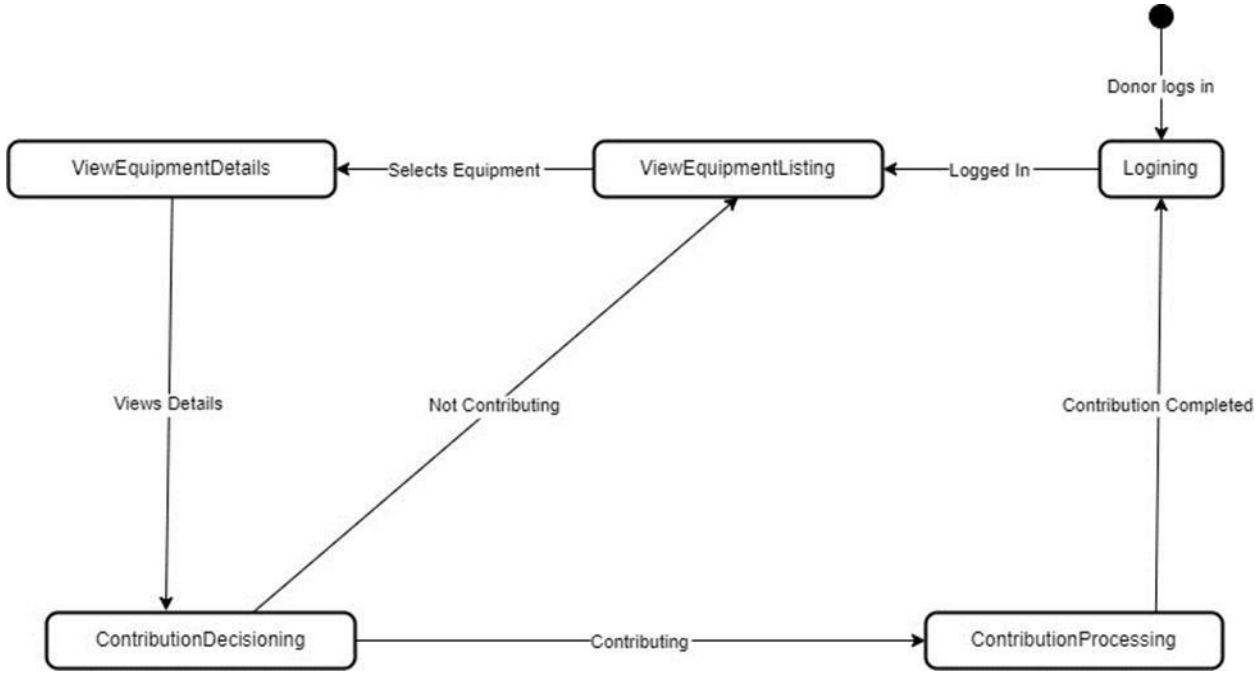
Donate medical equipment:



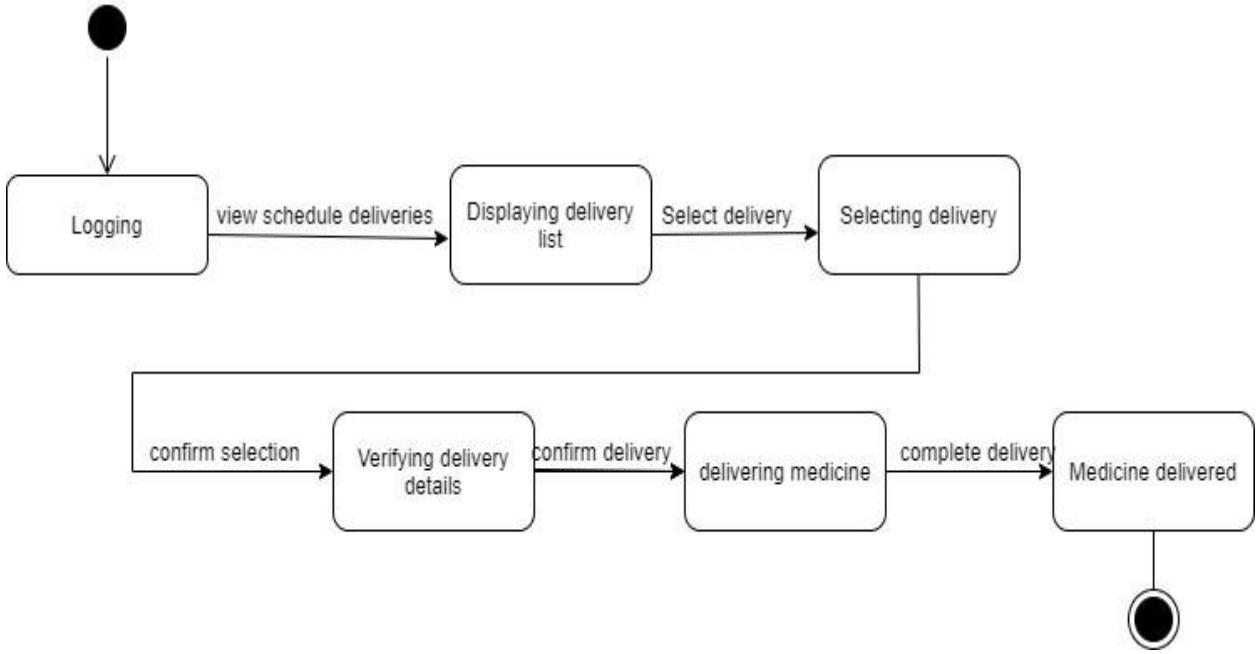
Verify medicine:



View needed equipment:



Deliver medicine:



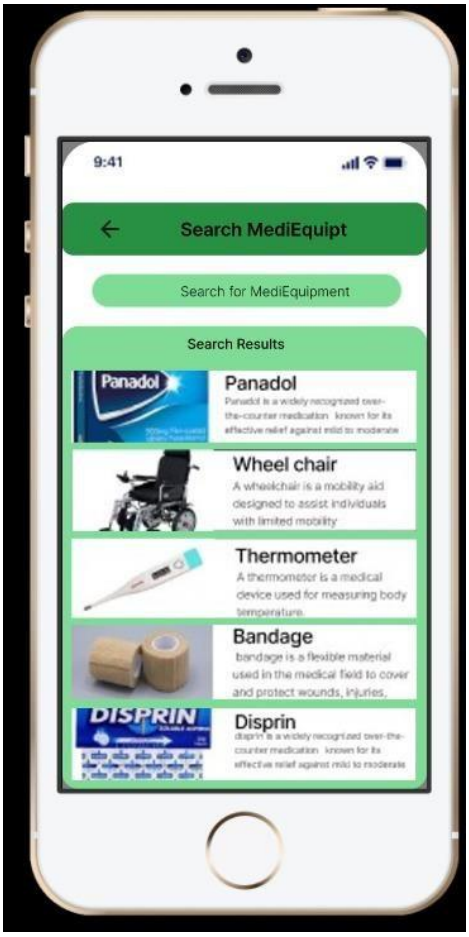
Artifact-6

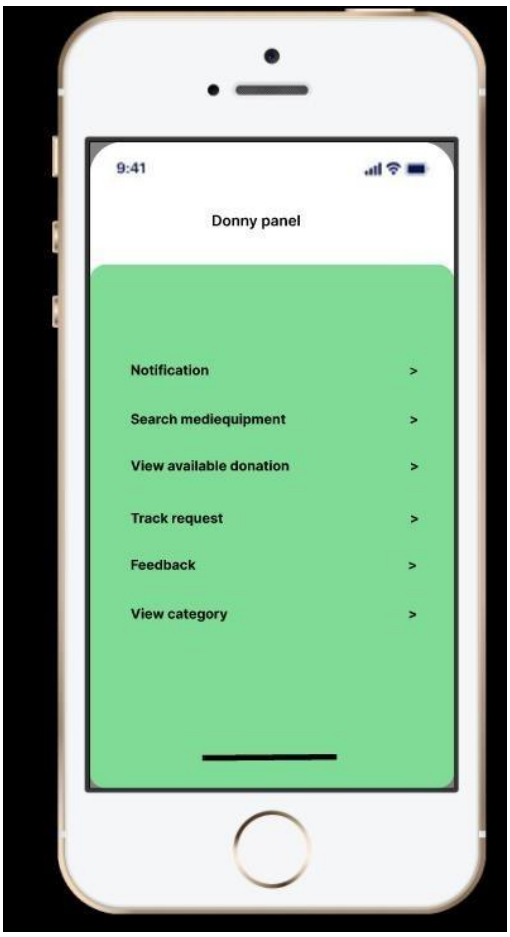
Interfaces of Project

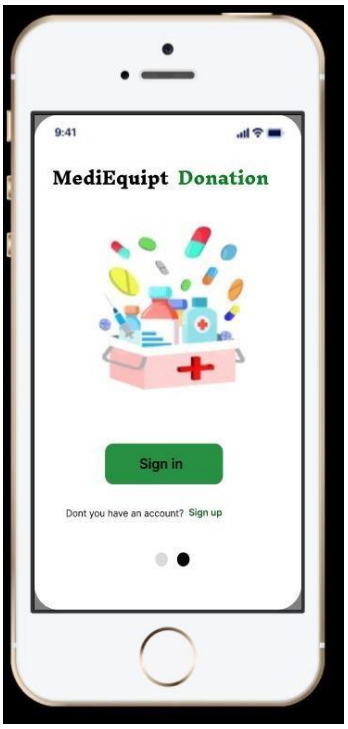
Interfaces:

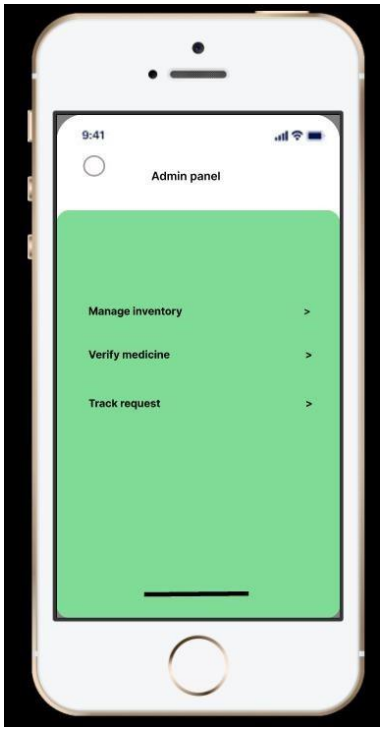

9:41
MediEquipt Donation
Get Started
When we give cheerfully and accept gracefully everyone is blessed

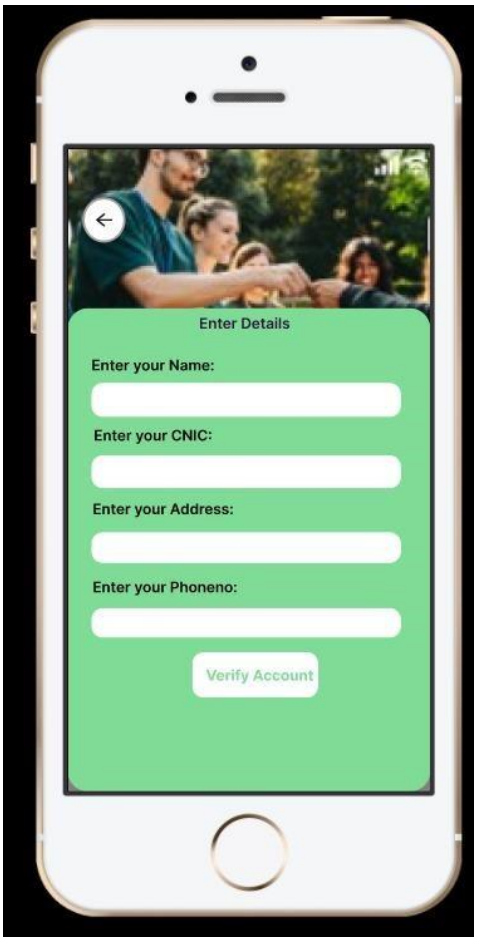

9:41
MediEquipt Donation
Name
first name
Last name
Contact number
Email address
Phone number
Description
Register

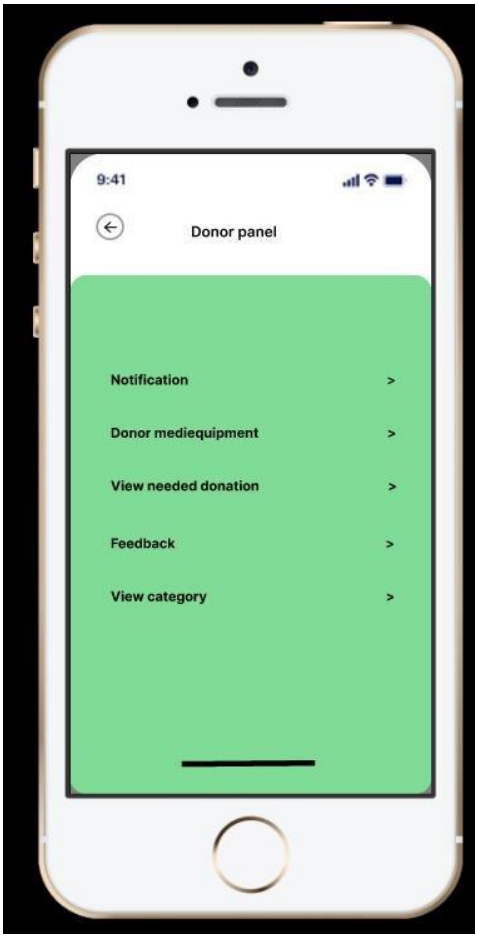

9:41
Search MediEquipt
Search for MediEquipment
Search Results
Panadol
Panadol is a widely recognized over-the-counter medication known for its effective relief against mild to moderate
Wheel chair
A wheelchair is a mobility aid designed to assist individuals with limited mobility
Thermometer
A thermometer is a medical device used for measuring body temperature.
Bandage
bandage is a flexible material used in the medical field to cover and protect wounds, injuries,
DISPRIN
Disprin
disprin is a widely recognized over-the-counter medication known for its effective relief against mild to moderate


9:41
Donny panel
Notification >
Search mediequipment >
View available donation >
Track request >
Feedback >
View category >

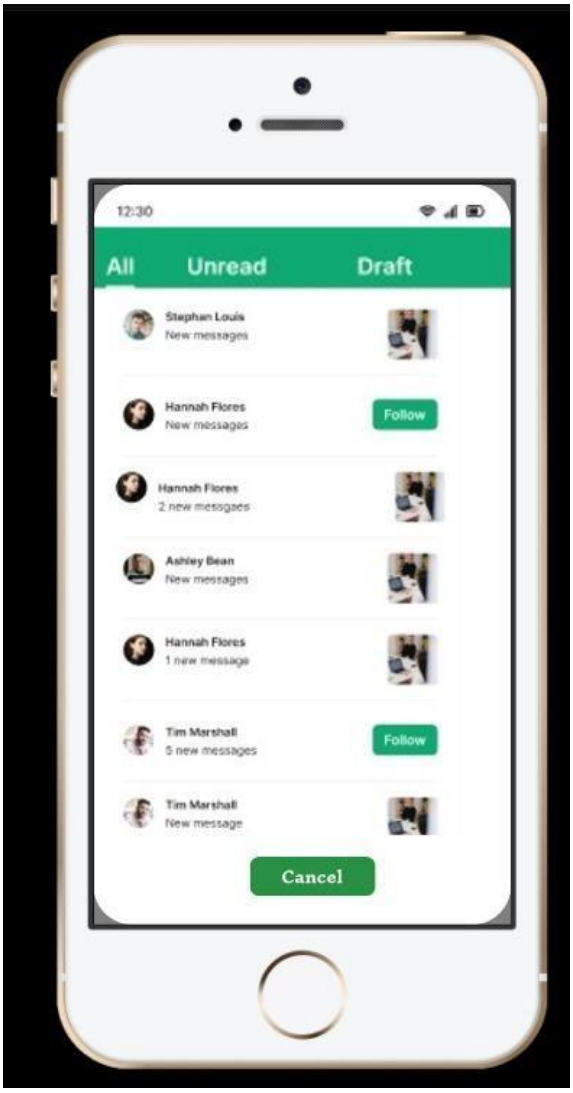

9:41
MediEquipt Donation
Sign in
Dont you have an account? Sign up


9:41
Admin panel
Manage inventory >
Verify medicine >
Track request >


Enter Details
Enter your Name:
Enter your CNIC:
Enter your Address:
Enter your Phoneno:
Verify Account


9:41
Donor panel
Notification >
Donor mediequipment >
View needed donation >
Feedback >
View category >


9:41
MediEquipt Donation
Category
MEDICINES
WHEELCHAIRS
BANDAGES


12:30
All
Unread
Draft
Stephan Louis
New messages
Hannah Flores
New messages
Follow
Hannah Flores
2 new messages
Ashley Bean
New messages
Hannah Flores
1 new message
Tim Marshall
5 new messages
Follow
Tim Marshall
New message
Cancel

Artifact-6

Implementation of Project

1. Login Service.java:

```
public interface LoginService {     boolean
login(String username, String password);
}
```

2. Login ServiceImpl.java:

```
 public class LoginServiceImpl implements LoginService {
    @Override     public boolean login(String username, String password)
{        return username.equals("admin") &&
password.equals("admin123");
    }
}
```

3. InventoryManager.java:

```
    public interface InventoryManager {
        void addMedicine(String name, int quantity); // Only requires name and quantity
        void deleteMedicine(String name);
        void updateMedicine(String name, int quantity);
        void displayInventory();
        boolean isMedicineAvailable(String name);
        boolean donateMedicine(String name, int quantity);
}
```

4. InventoryManagerImpl.java:

```
import java.util.HashMap;
import java.util.Map;

public class InventoryManagerImpl implements InventoryManager {
```

```
private Map<String, Integer> inventory;

public InventoryManagerImpl() {
    inventory = new HashMap<>();
}

@Override
public void addMedicine(String name, int quantity) {
    inventory.put(name, inventory.getOrDefault(name, 0) + quantity);
}

@Override
public void deleteMedicine(String name) {
    if (inventory.containsKey(name)) {
        inventory.remove(name);
        System.out.println(name + " has been removed from inventory.");
    } else {
        System.out.println("Medicine not found.");
    }
}

@Override
public void updateMedicine(String name, int quantity) {
    if (inventory.containsKey(name)) {
        inventory.put(name, quantity);
        System.out.println(name + " quantity updated to " + quantity);
    } else {
        System.out.println("Medicine not found.");
```

```
        }
    }

    @Override
    public void displayInventory() {
        if (inventory.isEmpty()) {
            System.out.println("No medicines available in the inventory.");
        } else {
            int index = 1;
            for (Map.Entry<String, Integer> entry : inventory.entrySet()) {
                System.out.println(index++ + ". " + entry.getKey() + " - Quantity: " +
entry.getValue());
            }
        }
    }

    @Override
    public boolean isMedicineAvailable(String name) {
        return inventory.containsKey(name);
    }

    @Override
    public boolean donateMedicine(String name, int quantity) {
        if (inventory.containsKey(name) && inventory.get(name) >= quantity) {
            inventory.put(name, inventory.get(name) - quantity);
            return true;
        }
        return false;
```

```
    }
}
```

5. **Medicine.java:**

```
public class Medicine {
private String name;
private int quantity;
private double price;

    public Medicine(String name, int quantity, double price)
{       this.name = name;       this.quantity = quantity;
this.price = price;
    }

    public String getName() {
return name;
    }

    public int getQuantity() {
return quantity;
    }

    public void setQuantity(int quantity) {
this.quantity = quantity;
    }
```

```
    public double getPrice() {
  return price;
    }
  }
```

Main.java:

```
import java.util.Scanner;


public class Main {
  public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);


    // Print start banner

System.out.println("**********************************************************************
**********");
    System.out.println("                    Online Mediequipt Donation System");

System.out.println("**********************************************************************
**********");


    // Login Service
    LoginService loginService = new LoginServiceImpl();
```

```
// Ask login type (Admin or User)
System.out.println("Login as:");
System.out.println("1. Admin");
System.out.println("2. User");
System.out.print("Enter login as: ");
int loginChoice = scanner.nextInt();
scanner.nextLine(); // Consume newline character

if (loginChoice == 1) {
    // Admin Login
    System.out.print("Enter username for admin: ");
    String username = scanner.nextLine();
    System.out.print("Enter password for admin: ");
    String password = scanner.nextLine();

    if (username.equals("admin") && password.equals("admin123")) {
        // Admin menu
        System.out.println("\nLogin successful for " + username + "\n");
```

```
// Inventory Management
InventoryManager inventoryManager = new InventoryManagerImpl();
inventoryManager.addMedicine("Paracetamol", 200);
inventoryManager.addMedicine("Panadol", 400);
inventoryManager.addMedicine("Acefyl", 100);

while (true) {
    // Admin action menu
    System.out.println("Choose an option:");
    System.out.println("1. Add Medicine");
    System.out.println("2. Delete Medicine");
    System.out.println("3. Update Medicine");
    System.out.println("4. Exit");
    System.out.print("Enter what you want to do:");
    int adminChoice = scanner.nextInt();
    scanner.nextLine(); // Consume newline character

    switch (adminChoice) {
```

```
case 1: // Add Medicine
    System.out.print("Enter medicine name to add: ");
    String addMedicineName = scanner.nextLine();
    System.out.print("Enter quantity: ");
    int addQuantity = scanner.nextInt();
    inventoryManager.addMedicine(addMedicineName, addQuantity);
    System.out.println(addMedicineName + " added to inventory.");
    break;

case 2: // Delete Medicine
    System.out.print("Enter medicine name to delete: ");
    String deleteMedicineName = scanner.nextLine();
    inventoryManager.deleteMedicine(deleteMedicineName);
    break;

case 3: // Update Medicine
    System.out.print("Enter medicine name to update: ");
    String updateMedicineName = scanner.nextLine();
    System.out.print("Enter new quantity: ");
```

```
                int updateQuantity = scanner.nextInt();
                inventoryManager.updateMedicine(updateMedicineName, updateQuantity);
                break;

            case 4: // Exit
                System.out.println("Thank you for managing the donations!");
                printEndBanner(); // Print end banner
                return;

            default:
                System.out.println("Invalid option, please try again.");
        }
      }
    } else {
      System.out.println("Login failed. Please check your username or password.");
      printEndBanner();
    }
  } else if (loginChoice == 2) {
    // User Login
```

```
System.out.print("Enter username for user: ");
String userUsername = scanner.nextLine();
System.out.print("Enter password for user: ");
String userPassword = scanner.nextLine();

if (userUsername.equals("user") && userPassword.equals("user123")) {
    System.out.println("\nLogin successful for " + userUsername + "\n");

    // User's donation experience
    InventoryManager inventoryManager = new InventoryManagerImpl();
    inventoryManager.addMedicine("Paracetamol", 200);
    inventoryManager.addMedicine("Acefyl", 100);
    inventoryManager.addMedicine("Panadol", 400);

    while (true) {
        // Display available medicines
        System.out.println("\nAvailable Medicines:");
        inventoryManager.displayInventory();
        System.out.println("4. Exit");
```

```
                // Ask user which medicine they want to donate
                System.out.print("Enter name of medicine to donate or add to inventory: ");
                String medicineName = scanner.nextLine();

                if (medicineName.equalsIgnoreCase("exit") || medicineName.equals("4")) {
                    break;
                }

                // If the medicine does not exist, ask for quantity and add it to inventory
                if (!inventoryManager.isMedicineAvailable(medicineName)) {
                    System.out.print(medicineName + " is not in the inventory. Enter quantity to
add: ");
                    int quantity = scanner.nextInt();
                    scanner.nextLine(); // Consume newline character
                    inventoryManager.addMedicine(medicineName, quantity);
                    System.out.println(medicineName + " has been added to inventory.");
                    continue;
                }
```

```
                // Otherwise, donate the existing medicine
                System.out.print("Enter quantity to donate: ");
                int quantity = scanner.nextInt();
                scanner.nextLine(); // Consume newline character

                if (inventoryManager.donateMedicine(medicineName, quantity)) {
                    System.out.println(quantity + " units of " + medicineName + " donated successfully.");
                } else {
                    System.out.println("Insufficient stock to donate " + quantity + " units of " + medicineName + ".");
                }
            }

            System.out.println("Thank you for your generous donations!");
            printEndBanner();
        } else {
            System.out.println("Login failed. Please check your username or password.");
            printEndBanner();
        }
    } else {
```

```
            System.out.println("Invalid choice, please enter 1 for Admin or 2 for User.");
            printEndBanner();
        }

        scanner.close();
    }

    // Method to print end banner
    public static void printEndBanner() {
System.out.println("**********************************************************************
**********");
        System.out.println("                    Thank you for using Online Mediequipt Donation
System");
System.out.println("**********************************************************************
**********");
    }
}
```

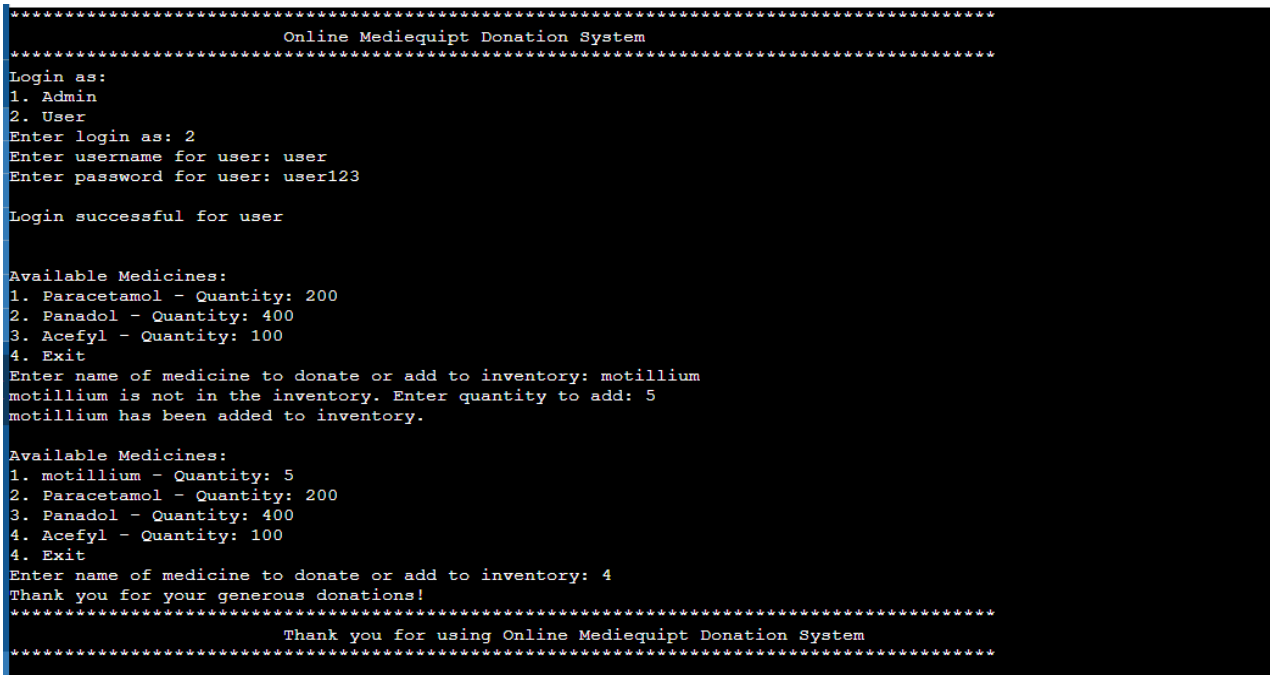
Output:

```
*********************************************************************************************
                        Online Mediequipt Donation System
*********************************************************************************************
Login as:
1. Admin
2. User
Enter login as: 1
Enter username for admin: admin
Enter password for admin: admin123

Login successful for admin

Choose an option:
1. Add Medicine
2. Delete Medicine
3. Update Medicine
4. Exit
Enter what you want to do:
1
Enter medicine name to add: motillium
Enter quantity: 4
motillium added to inventory.
Choose an option:
1. Add Medicine
2. Delete Medicine
3. Update Medicine
4. Exit
Enter what you want to do:3
Enter medicine name to update: motillium
Enter new quantity: 6
motillium quantity updated to 6
Choose an option:
1. Add Medicine
2. Delete Medicine
3. Update Medicine
4. Exit
```

```
motillium quantity updated to 6
Choose an option:
1. Add Medicine
2. Delete Medicine
3. Update Medicine
4. Exit
Enter what you want to do:2
Enter medicine name to delete: motillium
motillium has been removed from inventory.
Choose an option:
1. Add Medicine
2. Delete Medicine
3. Update Medicine
4. Exit
Enter what you want to do:4
Thank you for managing the donations!
*********************************************************************************************
                        Thank you for using Online Mediequipt Donation System
*********************************************************************************************
```



Layer	Files
Model	Medicine.java,InventoryManager.java, InventoryManagerImpl.java
View	Main.java
Controller	LoginService.java, LoginServiceImpl.java