EAST WEST UNIVERSITY

Department of Computer Science and Engineering

Health Care App

Project Report

Course Code
CSE 347
Course Title
Information System Analysis and Design
Section 3

Submitted To:

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Submitted By:

Group #6

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Health Care App

Group-6

1. Scenario:

Health Care App

A healthcare company wants to provide a health care app for individuals diagnosed with Type 2 diabetes to manage health conditions effectively. Here's a typical expected scenario while using the app:

1. Morning Routine:

-The user will start his day by checking his blood glucose levels using a connected glucometer.

- The app syncs with the glucometer, recording the data and providing instant feedback on whether his levels are within the target range.

- Based on the readings, the app will suggest personalized dietary recommendations for breakfast, considering the patient's glucose levels and preferences.

2. Meal Tracking:

- The user can log his breakfast in the app, detailing the types and quantities of food consumed.

- The app can calculate the nutritional content and provide real-time feedback on how the meal may impact his blood sugar levels.

3. Medication Reminders:

- The app can send a notification reminding the user to take his morning medication.

- It will be able to track his medication adherence and send alerts if he forgets, ensuring he stays on track with his prescribed regimen.

4. Activity Planning:

- The user can input his planned physical activities for the day into the app.
- The app recommends suitable exercises and tracks his progress, ensuring he maintains a healthy lifestyle to manage his diabetes.

5. Continuous Monitoring:

- Throughout the day, the app continuously monitors the user's glucose levels through connected devices, providing real-time updates and alerts for any deviations from the target range.

6. Consultation and Telehealth:

- The user can have a scheduled virtual consultation with his healthcare provider.
- Using the app, he shares his glucose trends, meal logs, and activity data, enabling his healthcare provider to make informed decisions and adjustments to his treatment plan.

7. Emergency Response:

- In case of an emergency, the app will have an integrated feature that allows user to quickly call for help or share his health information with emergency responders, providing critical details about his condition.

8. Health Insights and Trends:

- The app will analyze user's historical data to provide insights into trends and patterns in his health.
- It generates reports and visualizations that help user and his healthcare provider make informed decisions for long-term management.

2. Introduction:

Introducing our cutting-edge healthcare app tailored for individuals diagnosed with Type 2 diabetes, designed to empower users in managing their health effectively. From morning routines to emergency responses, our app seamlessly integrates various features to provide comprehensive support throughout the day. Users can effortlessly monitor their blood glucose levels, receive personalized dietary recommendations, track meals, and adhere to medication schedules. With activity planning and continuous monitoring, maintaining a healthy lifestyle becomes more manageable. Moreover, the app facilitates virtual consultations with healthcare providers, enabling informed decision-making based on real-time data. In emergencies, integrated features ensure swift access to assistance, while health insights and trends derived from historical data offer invaluable guidance for long-term management. Welcome to a new era of diabetes care, where technology meets compassion to enhance lives.

3. Features:

1. Login System
2. Admin Panel
3. Create an account.
4. Delete account.
5. View profile
6. Blood glucose Monitoring
7. Appointment Scheduling
8. Medical Records
9. Personalized Dietary Recommendations
10. Meal tracking
11. Reports
12. Medication Reminders
13. Emergency Response
14. Telemedicine
15. About Section
16. Activity Panel
17. Feedback Section
18. Health Insights and Trends
19. Data Security and privacy
20. Multi-Platform Access
21. Educational resources
22. Community Support
23. Manage Account (Customer, employee)

4. Requirements:

4.1. Functional Requirements:

1. The system shall allow users to register and create an account

2. The app must sync with a connected glucometer to allow users to check their blood glucose levels.

3. The app should provide instant feedback on whether the levels are within the target range.

4. The app should be able to create an account, modify and delete it.

5. The system shall require users to provide necessary details such as payment information and identification during account setup.

6. The app should be able to maintain details of employee

7. The system shall automatically calculate the total cost based on the service.

8. The app should maintain patient details such as name, phone no, address etc.

9. Data from glucometer readings must be recorded and accessible for review.

10. The app should receive feedback from the Patient.

4.2. Non-Functional Requirements:

1. The app must be compatible with both Android and iOS platforms.

2. The system will be accessible on any web browser and any compatible device.

3. The system should be available to users all the time.

4. The system will ensure user data, including payment information and identification, is securely stored, and processed.

5. How fast does the system return results and how much will this performance change with higher workloads.

6. The system should be easy to maintain and cost effective.

7. The system should include comprehensive logging of all user activities and system events to monitor performance and detect anomalies.

8. The system and its data must be protected against attack.

9. The app should be able to integrate with third-party services for payment processing, navigation, and location tracking.

10. Real-time monitoring tools should be implemented to alert administrators of any issues or breaches.

5. Use case Diagram:

5.1. Complete Use Case diagram:

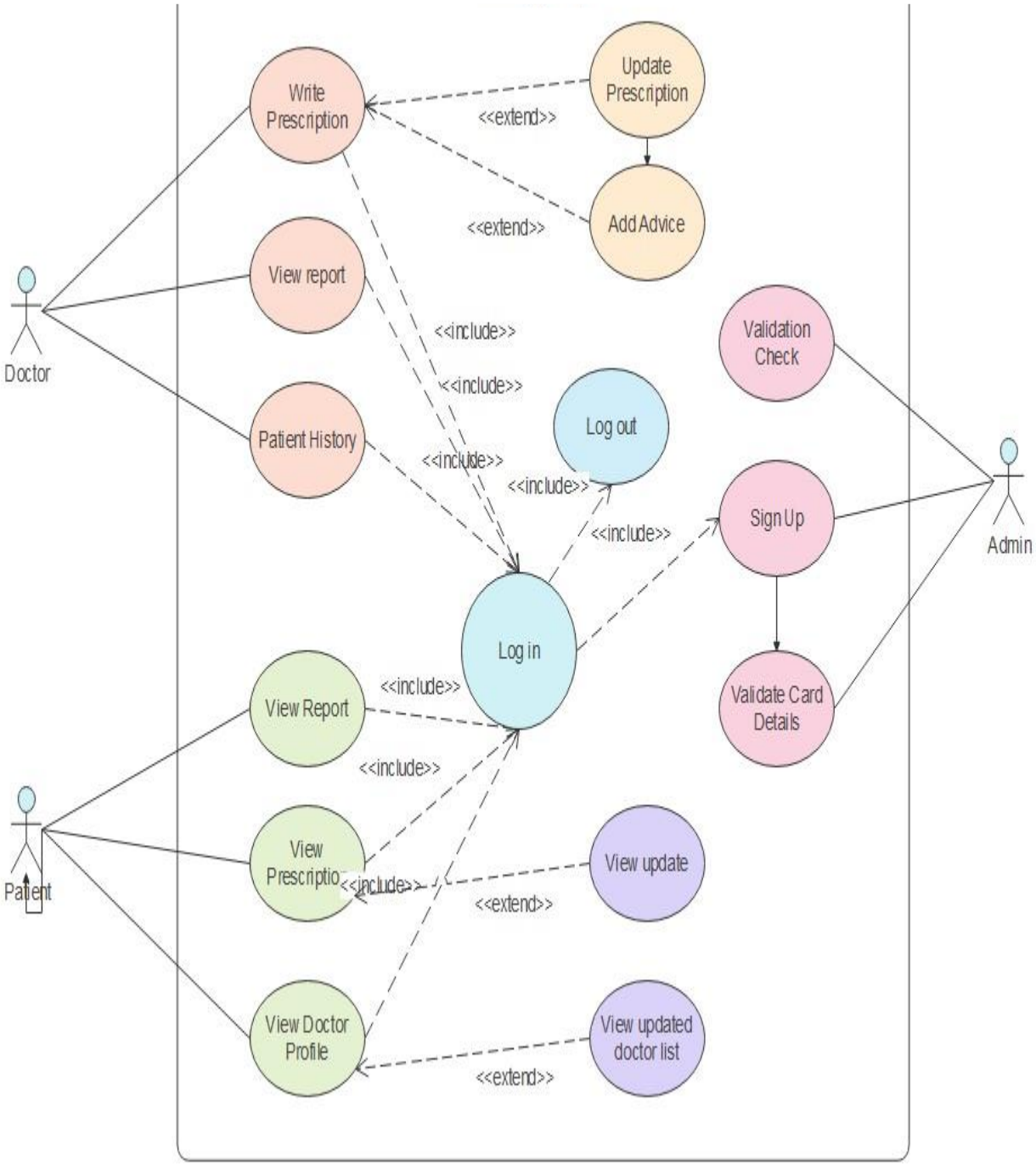


Figure: Health Care App

5.2. Use Case Diagram Level 0

Figure: Use Case diagram Level 0

5.3. Use Case diagram Level 1:

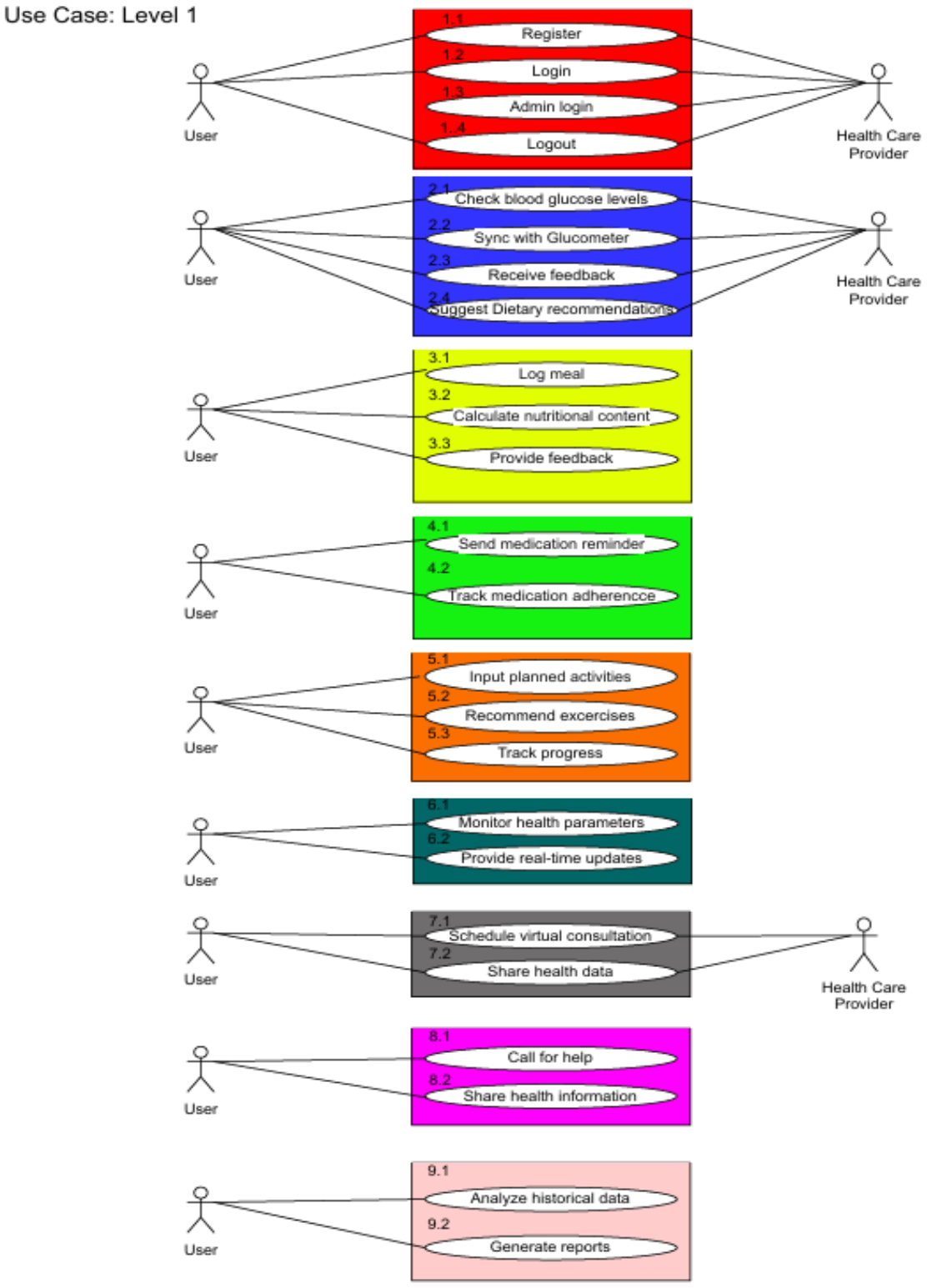


Figure: Use Case diagram Level 1

6. Activity Diagram:

6.1. User Registration:

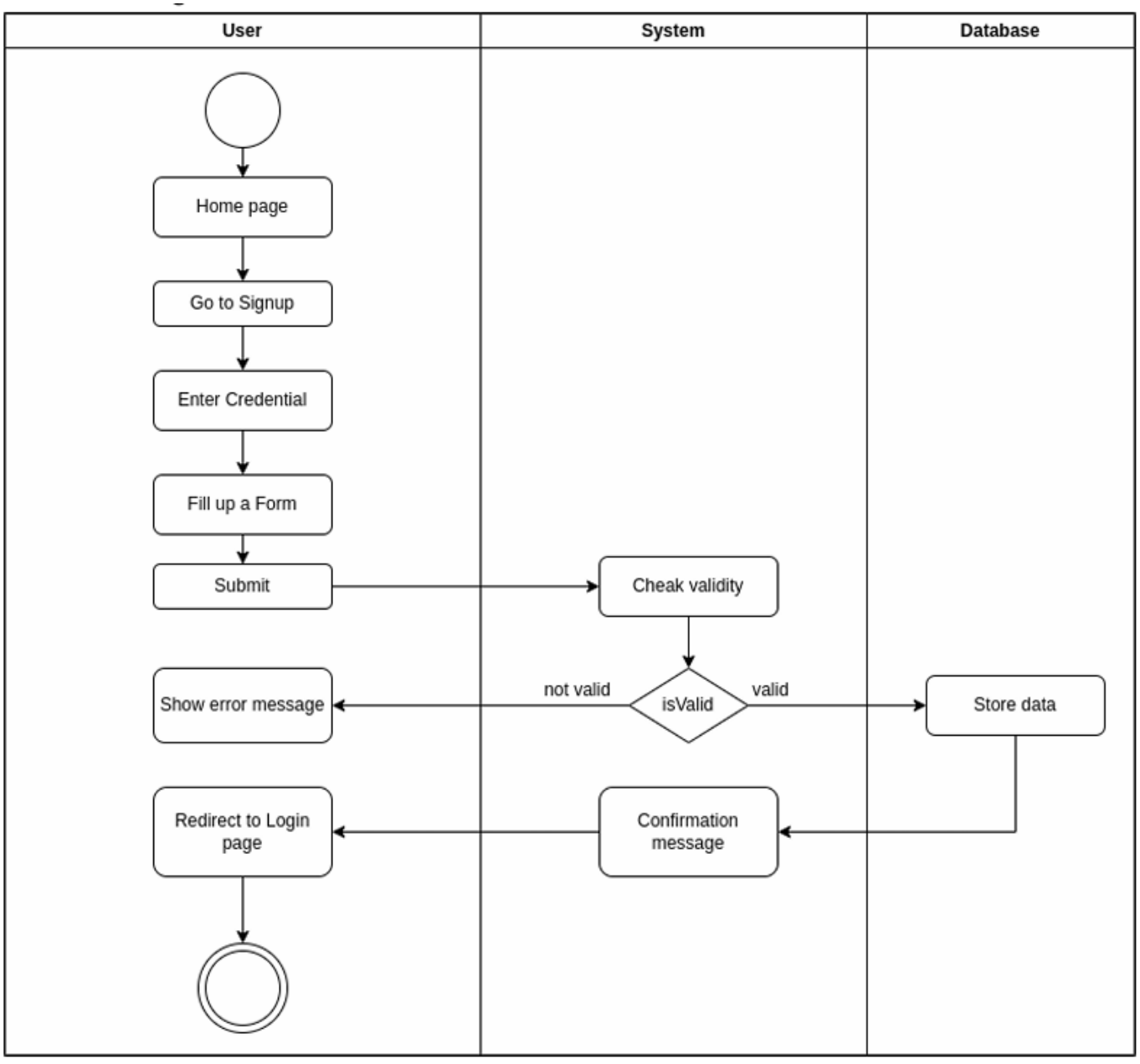


Figure: User Registration Activity Diagram

6.2. User Login:

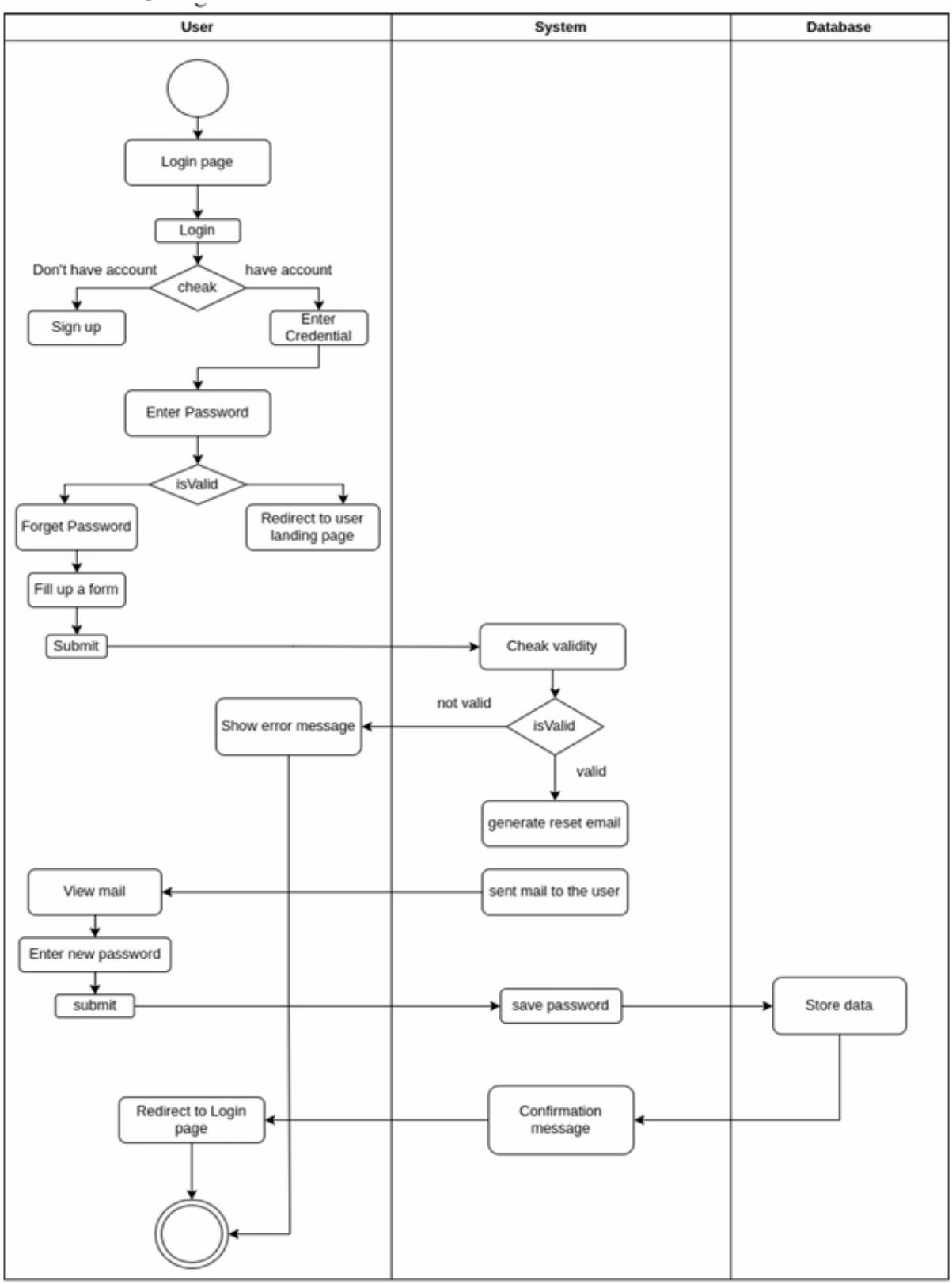


Figure: User Registration Activity Diagram

6.3. Appointment:

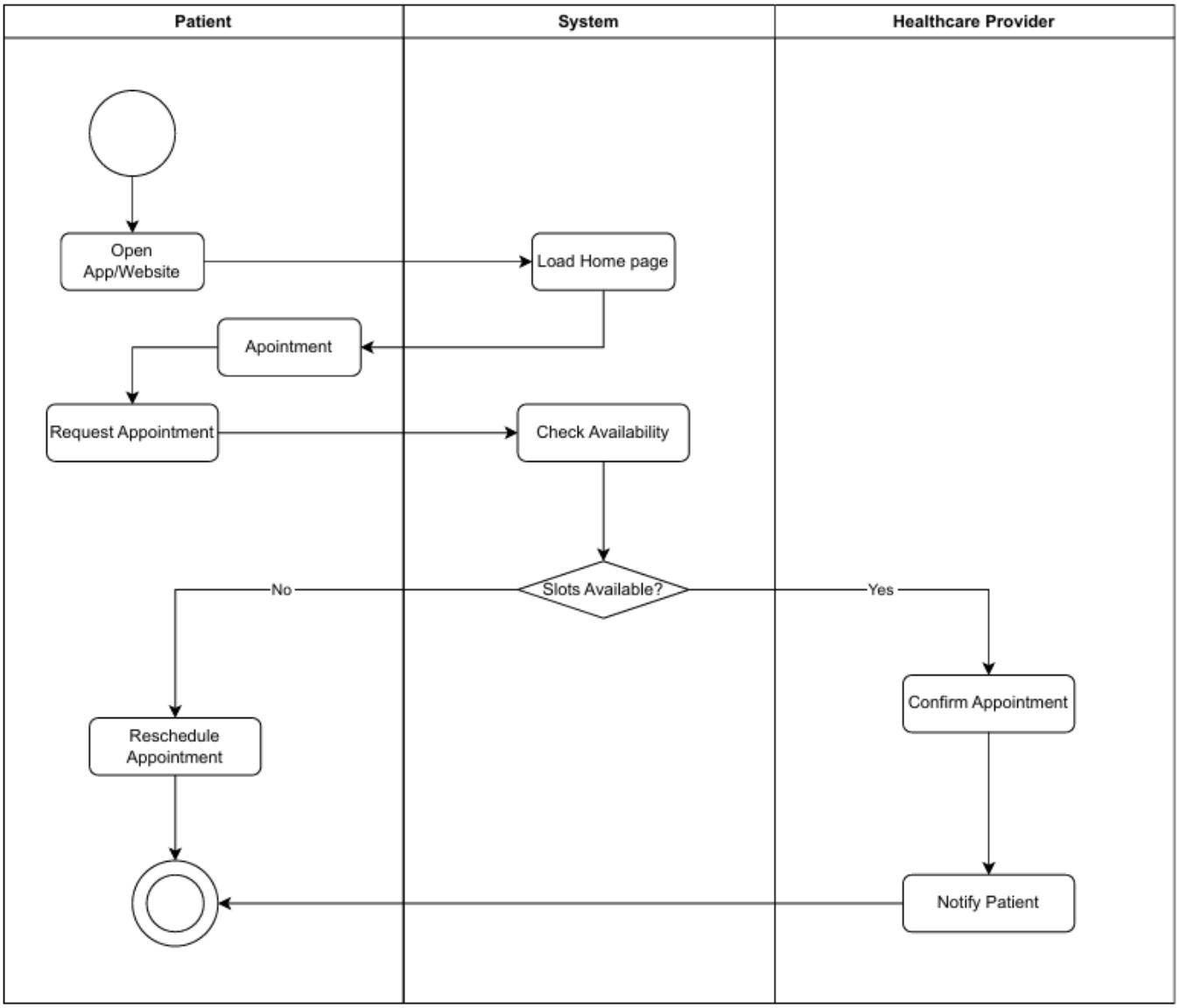


Figure: Appointment Activity Diagram

6.4. Blood Glucose Check:

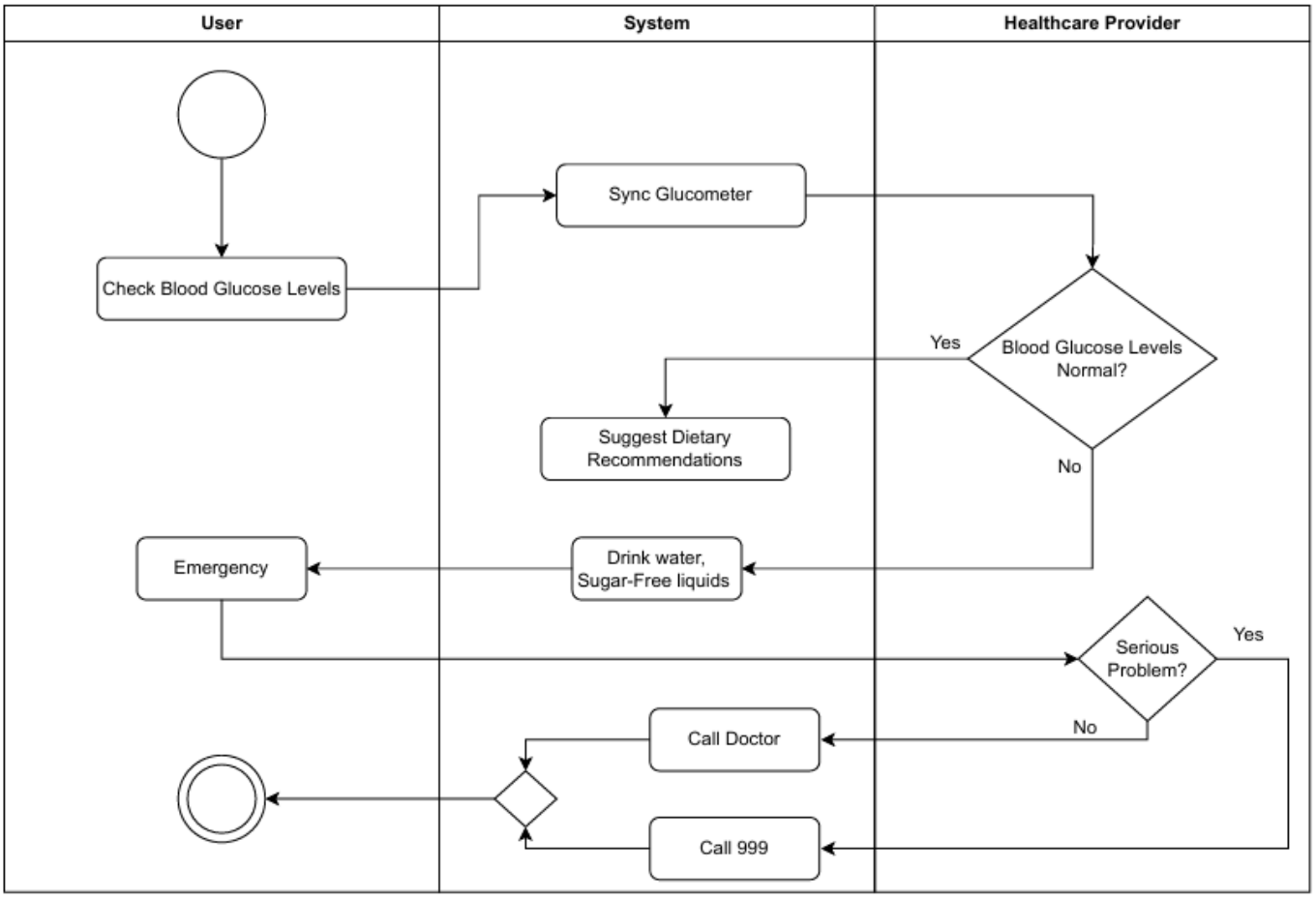


Figure: Blood Glucose Check Activity Diagram

6.5. Breakfast and Physical Activities:

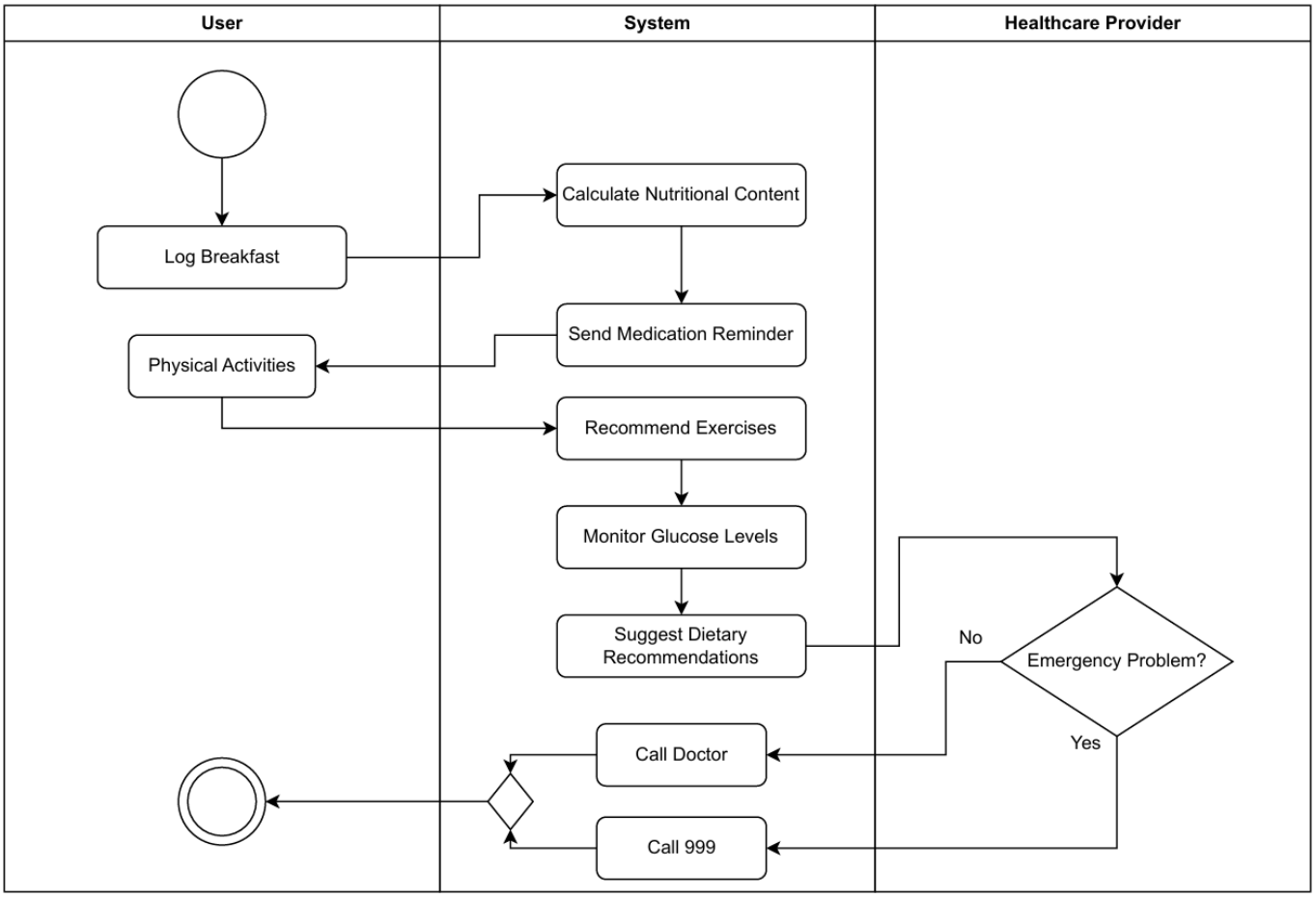


Figure: Breakfast and Physical Activities Activity Diagram

6.6. Consultancy:

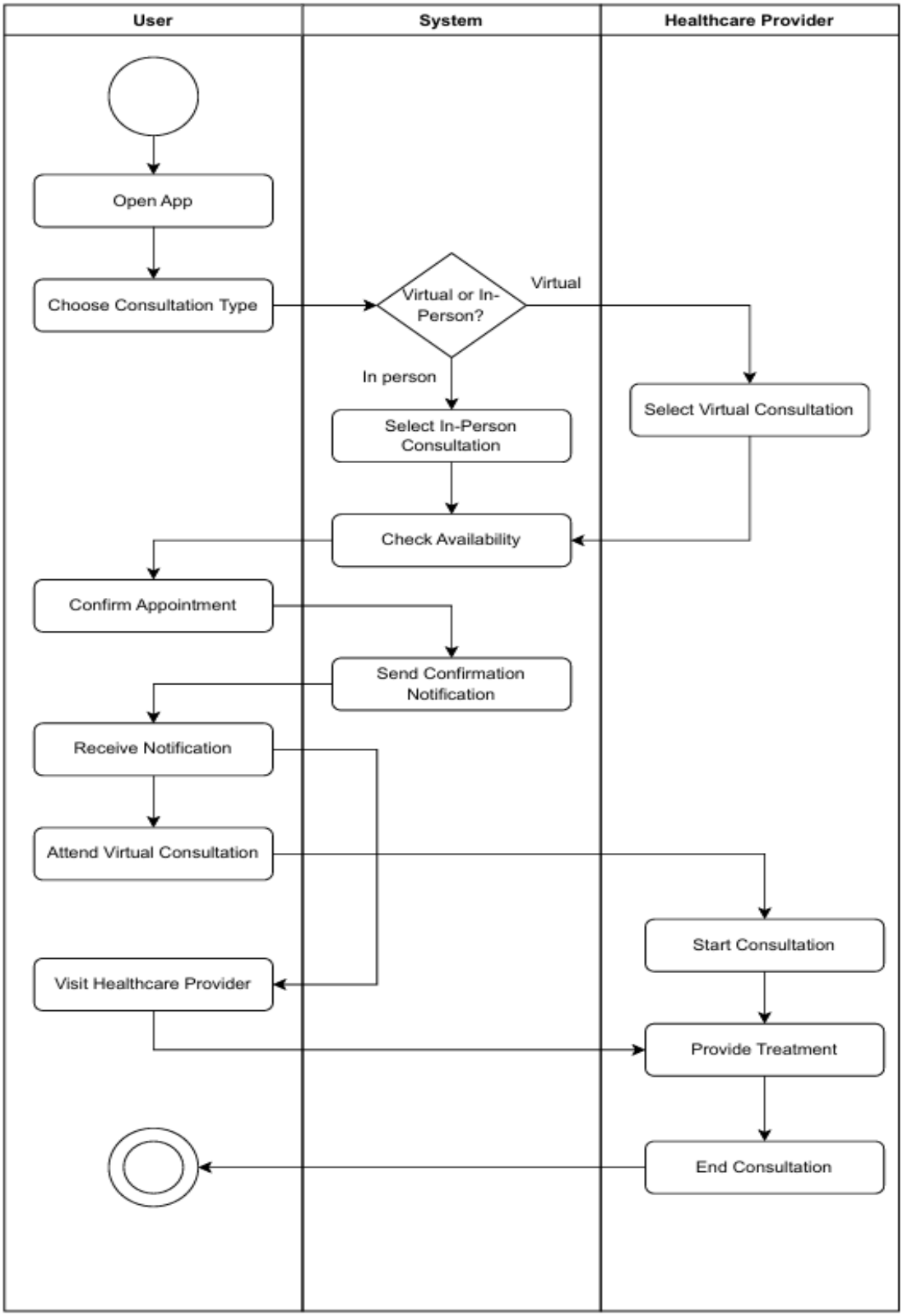


Figure: Consultancy Activity Diagram

6.7. Emergency:

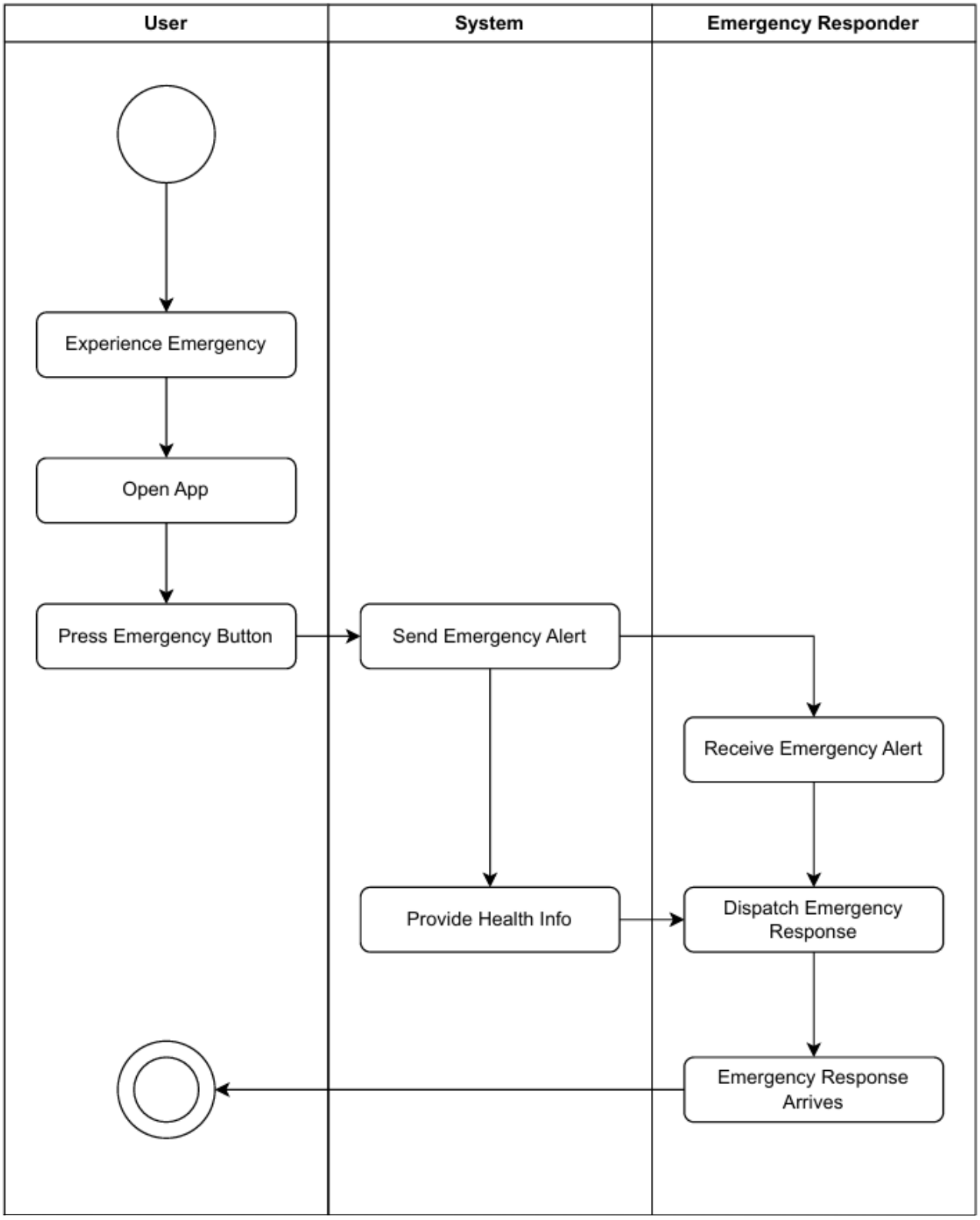


Figure: Emergency Activity Diagram

6.8. Payment and Receipt:

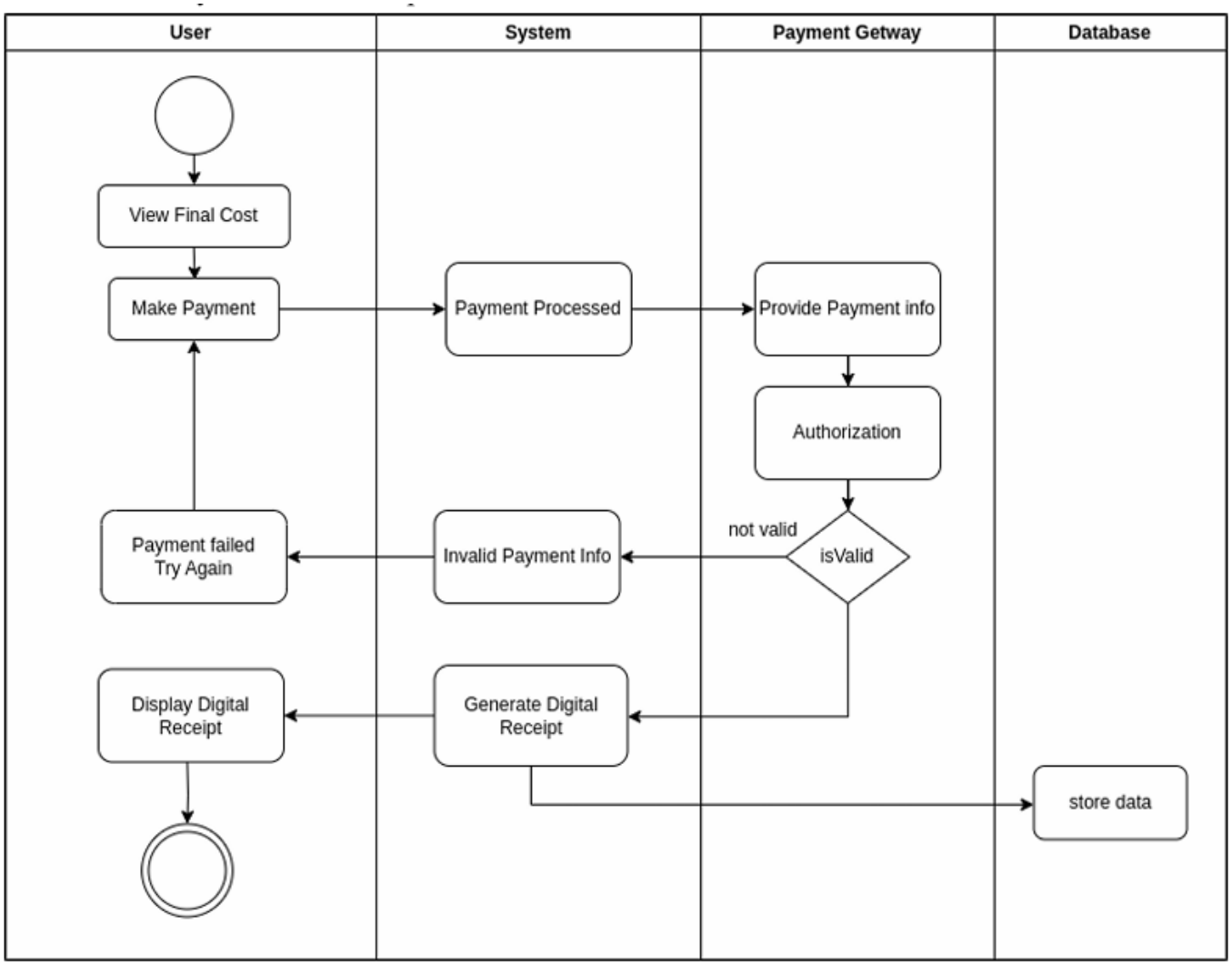


Figure: Payment and Receipt Activity Diagram

7. Class Diagram:

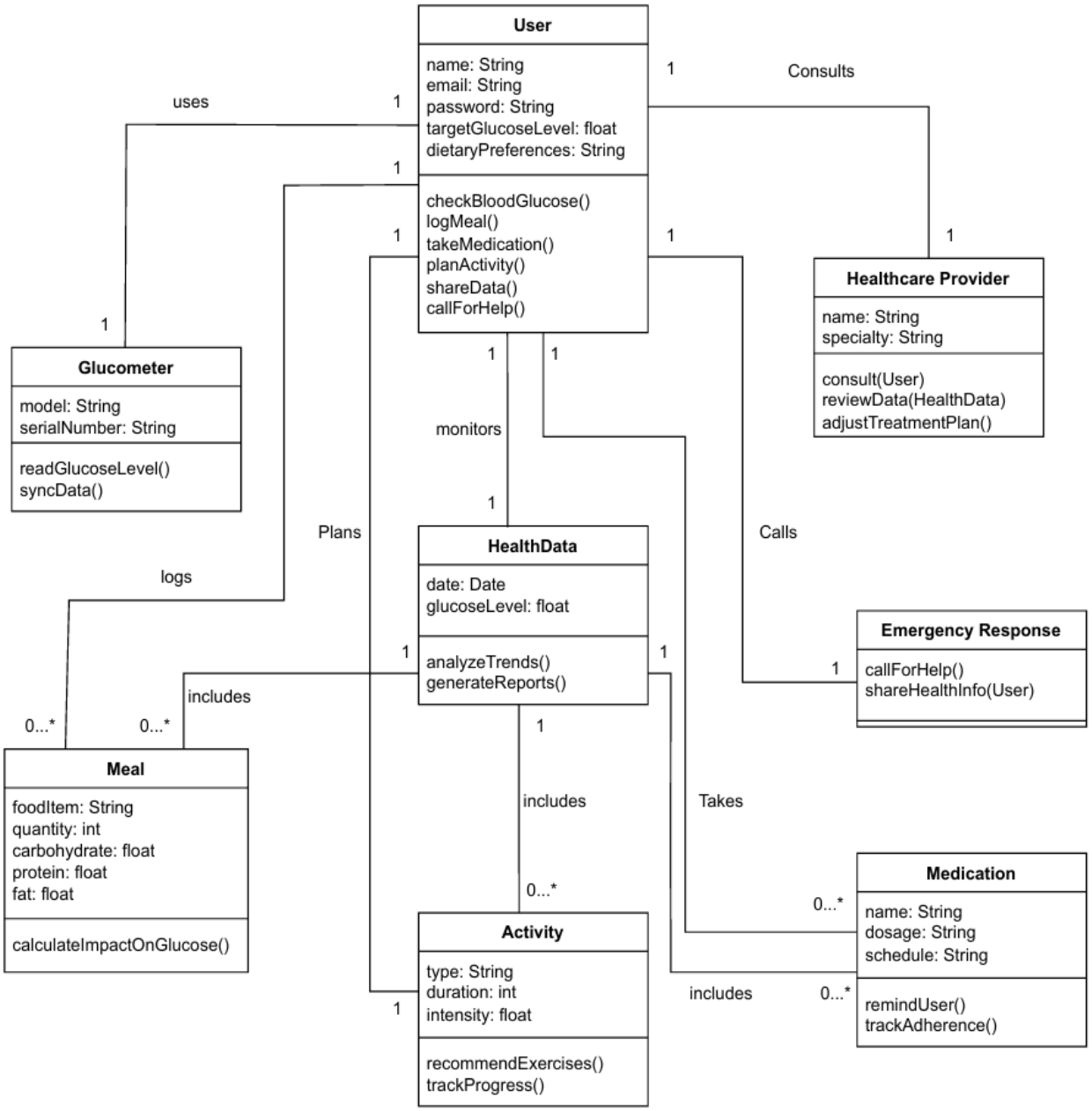


Figure: Class Diagram

8. Data Flow Diagram:

8.1. Level 0 Data Flow Diagram

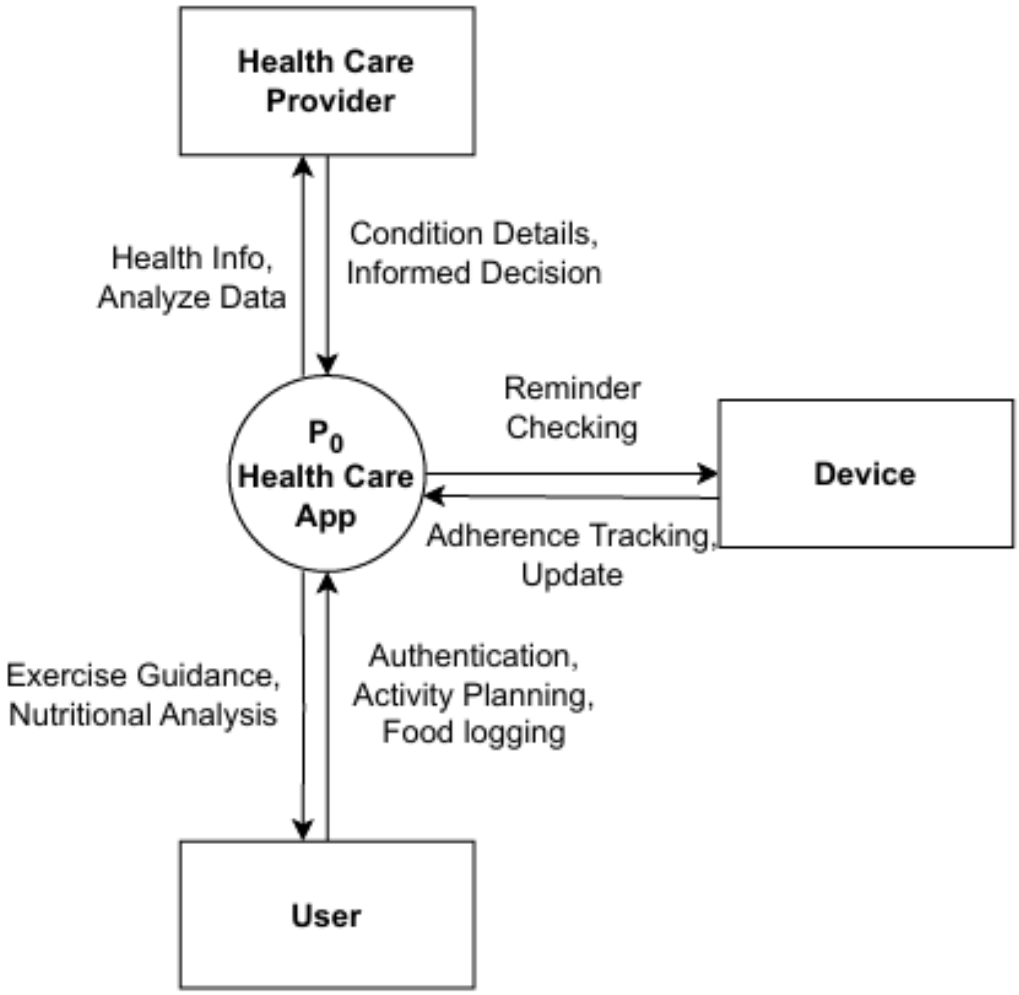


Figure: Level 0 Data Flow Diagram

8.2. Level 1 Data Flow Diagram

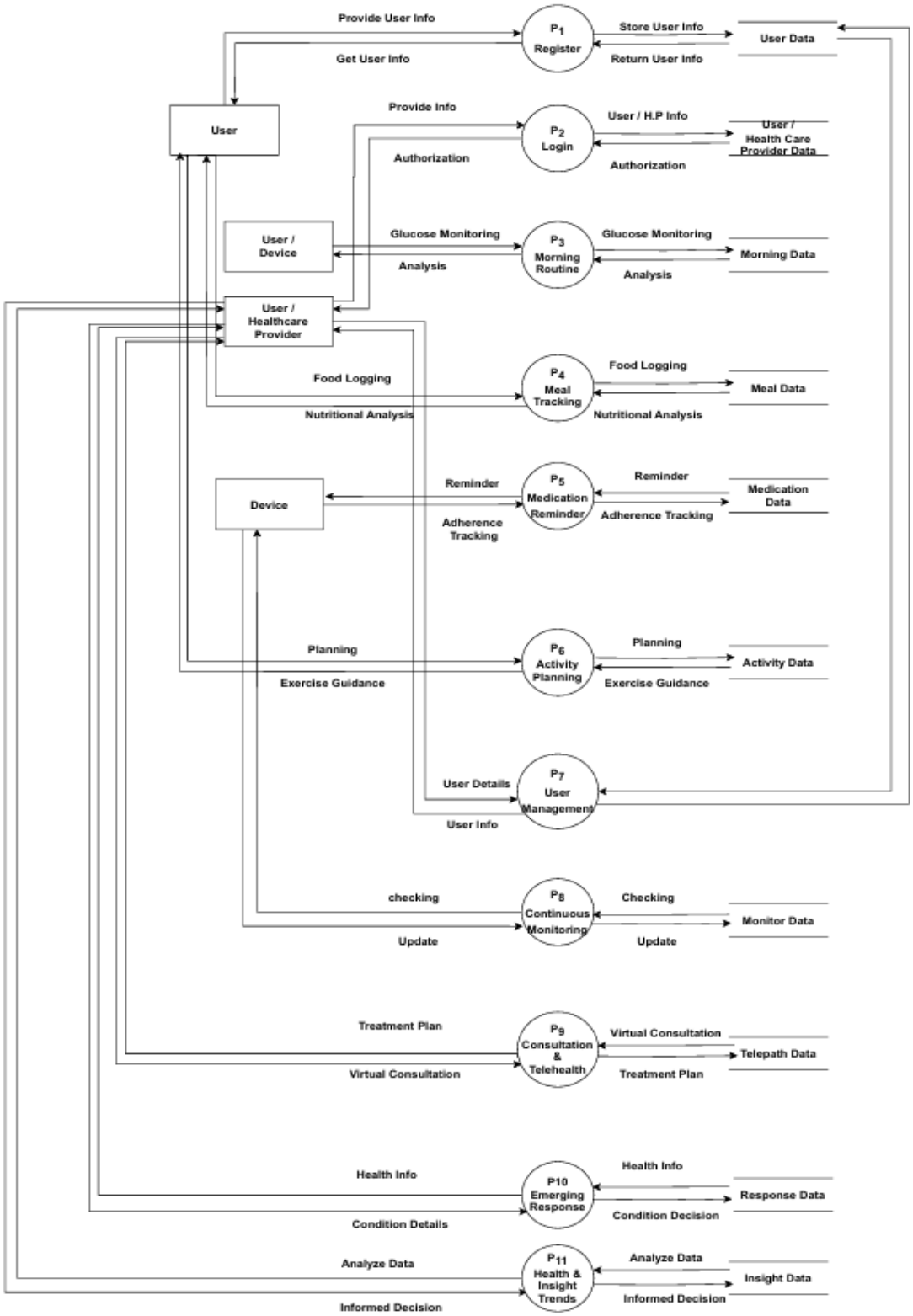


Figure: Level 1 Data Flow Diagram

9. Sequence Diagram:

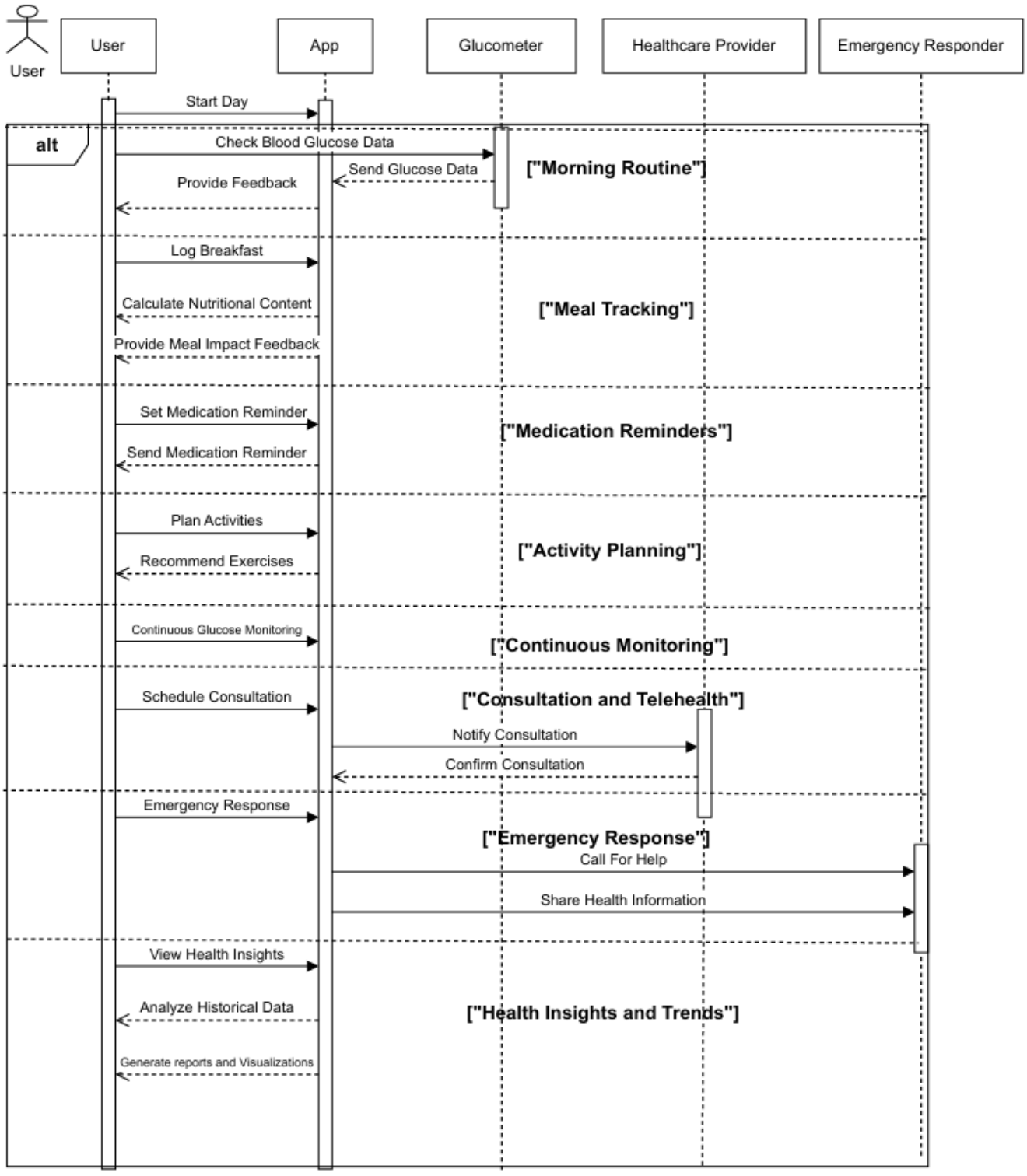


Figure: Sequence Diagram

10. Component Diagram:

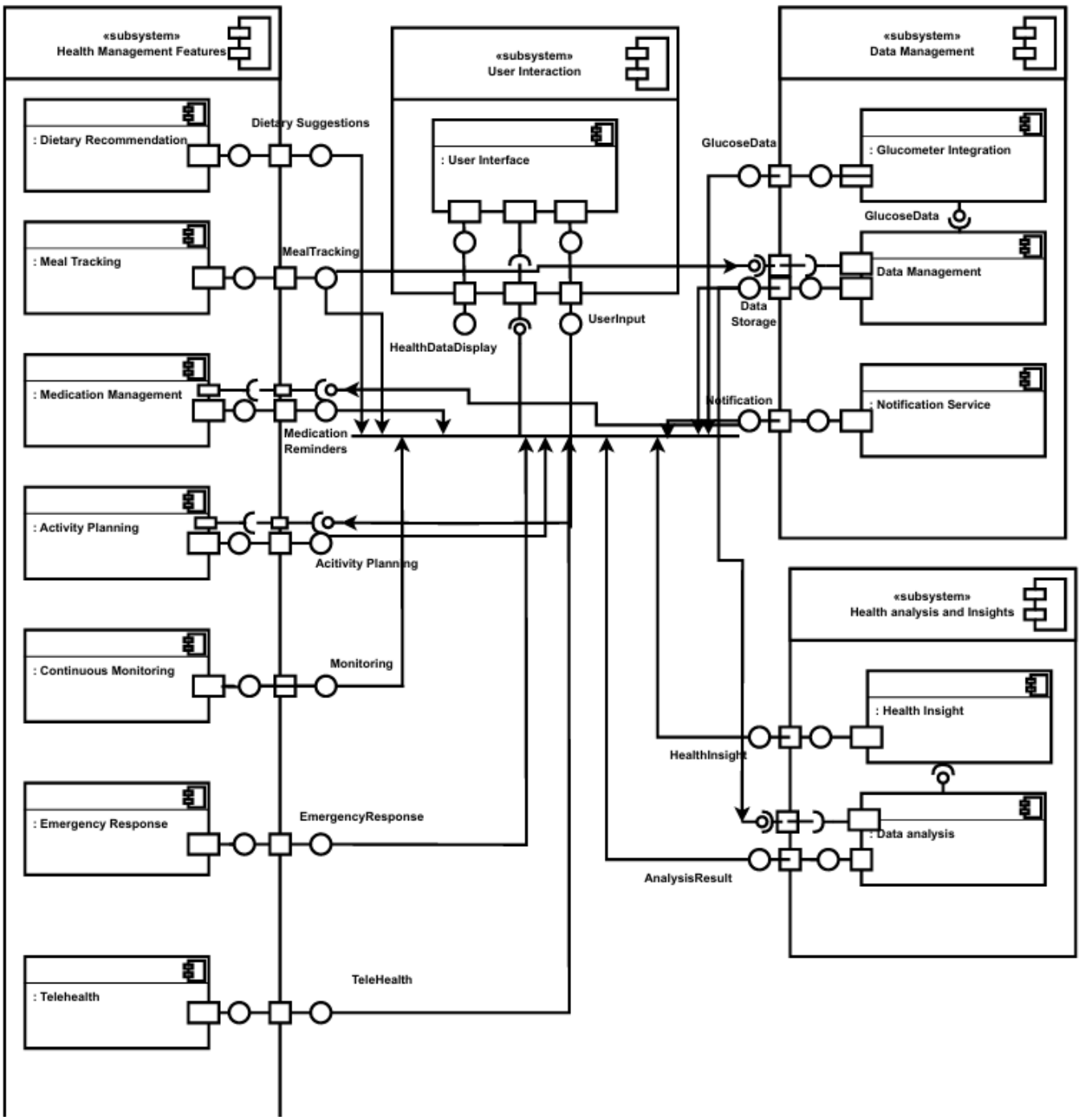


Figure: Component Diagram

11. Deployment Diagram:

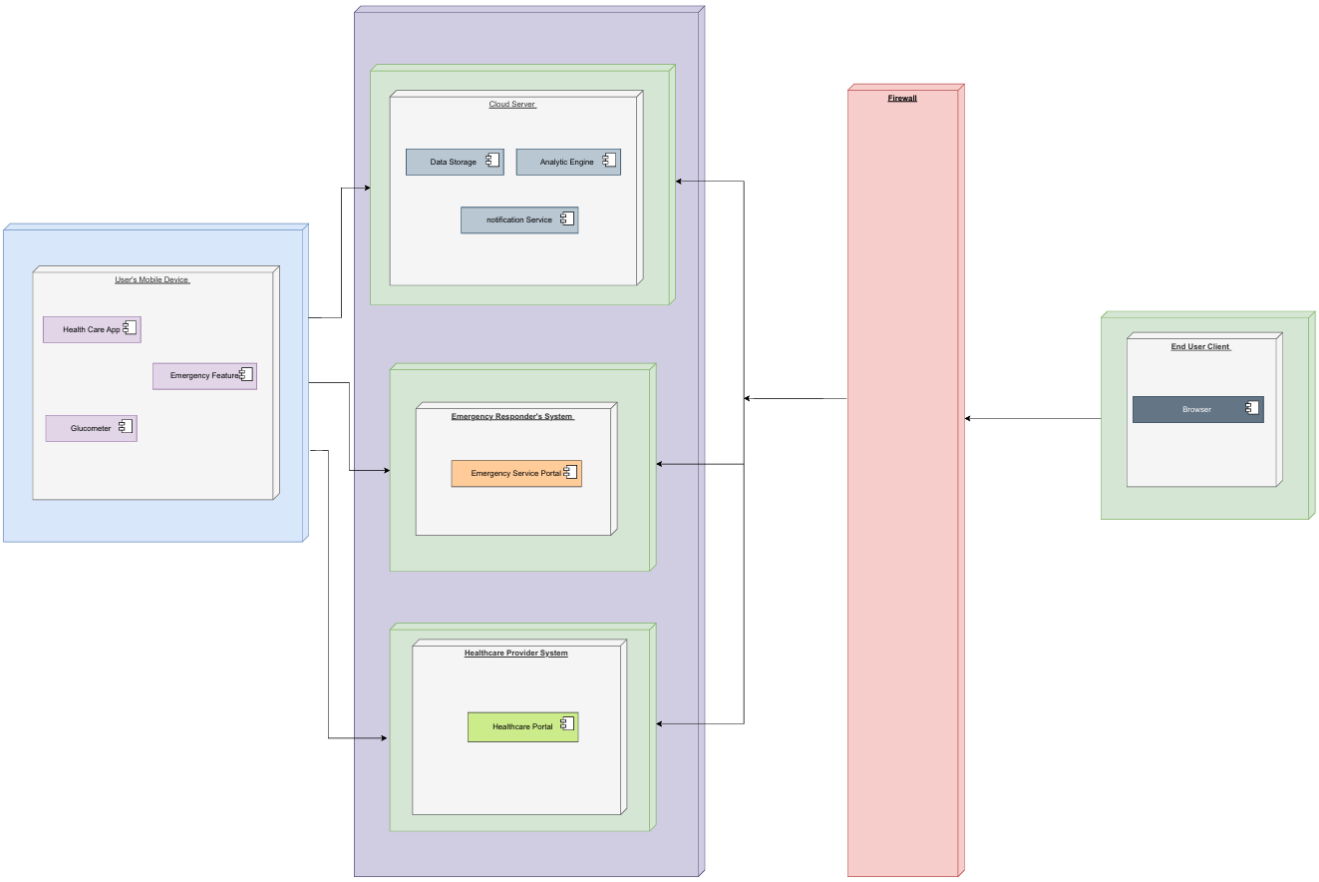
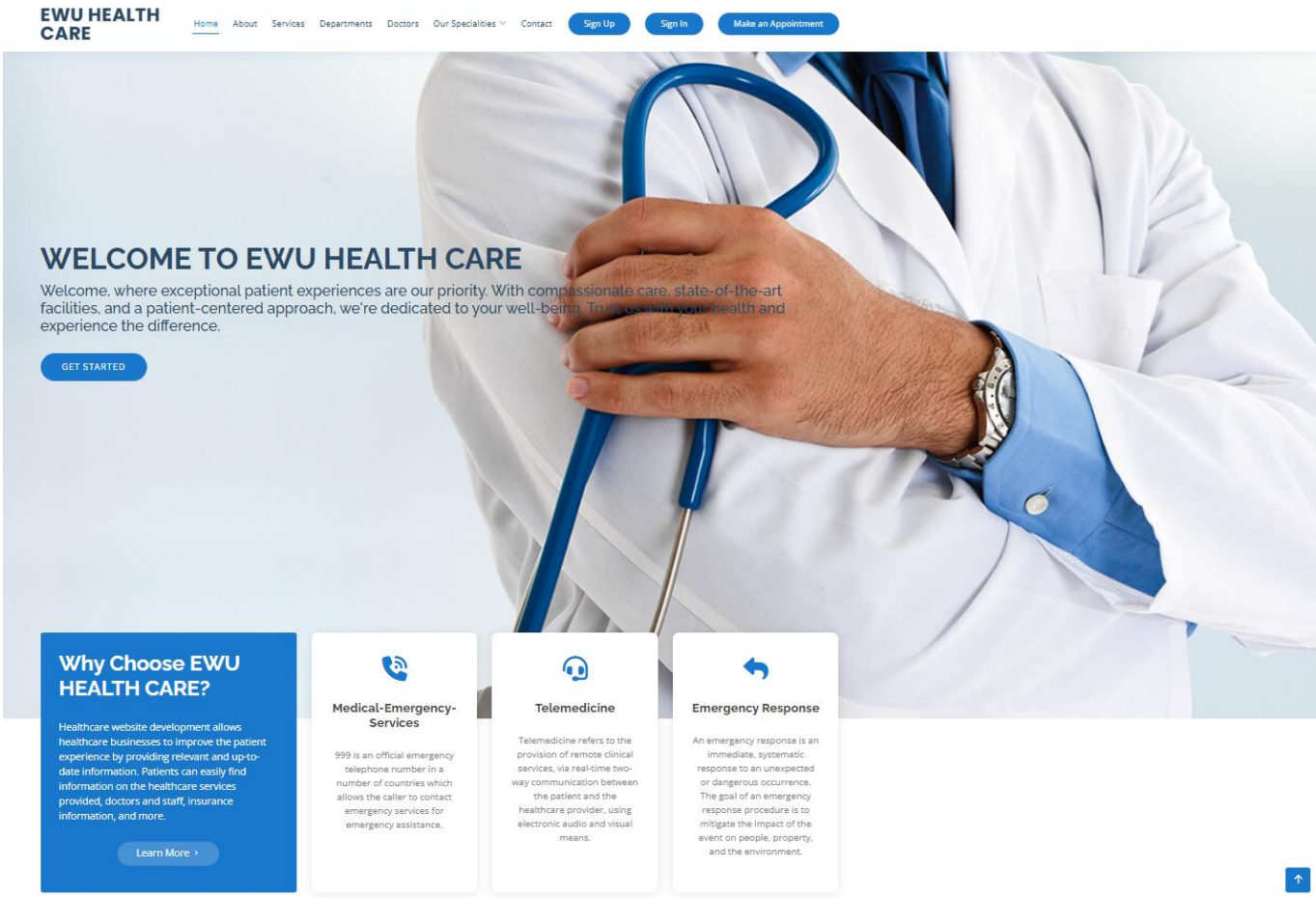
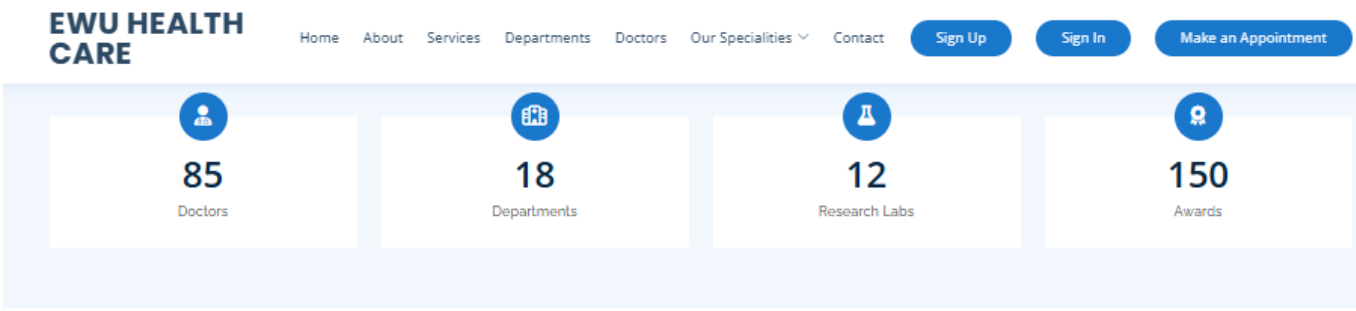


Figure: Deployment Diagram

12. Final Product:

12.1. Website





Services

Explore our extensive library of articles, watch educational videos, and use our interactive tools like the symptom checker and health tracker. Join our community forums for support and advice from peers.

Profile

To be a renowned organization at the leading edge of Medicine, providing quality healthcare to meet our nation's aspirations.

Emergency Services

The emergency services are the public organizations whose job is to take quick action to deal with emergencies when they occur, especially the fire brigade, the police, and the ambulance service.

Monitoring

It is quite common for healthcare facilities to install cameras for primary surveillance Generally, these cameras are placed in public spaces to help prevent crime and theft. However, sometimes cameras can be used to monitor private rooms as well.

Medical Record

Medical records are the document that explains all detail about the patient's history, clinical findings, diagnostic test results, pre and postoperative care, patient's progress and medication. If written correctly, notes will support the doctor about the correctness of treatment.

Hospital wheelchair System

Hospital wheelchairs have four equal wheels, which help carry heavier weight; however, home wheelchairs or manual chairs have two small and two large wheels in the back and front, respectively.

Patient's Feedback

Patient feedback is the information of patients' opinions, evaluations, and perceptions about their experiences with a hospital, clinic, or any healthcare centre. It can be about any aspect or particular service given by the healthcare providers or about the overall treatment, or stay in the hospital.

EWU HEALTH CARE

Home About Services Departments Doctors Our Specialities Contact Sign Up Sign In Make an Appointment

Make an Appointment

Magnam dolores commodi suscipit. Necessitatibus eius consequatur ex aliquid fuga eum quidem. Sit sint consectetur velit. Quisquam quos quisquam cupiditate. Et nemo qui impedit suscipit alias ea. Quia fugiat sit in iste officiis commodi quidem hic quas.

Your Name | Your Email | Your Phone

Appointment Date | Select Department | Select Doctor

Message (Optional)

Make an Appointment

Departments

Blocks forming a department of a hospital (or a suite of rooms) shared by patients who require the same type of care.

- Intensive Care Unit (ICU)
- Operating Room (OR)
- Medical-Surgical Unit
- Laboratory
- Pharmacy
- Administration
- Information Technology (IT)
- Marketing and Communications.

Intensive Care Unit (ICU)

Intensive care refers to the specialised treatment given to patients who are acutely unwell and require critical medical care. An intensive care unit (ICU) provides the critical care and life support for acutely ill and injured patients.

Life Support: ICUs provide life-sustaining therapies and interventions, such as mechanical ventilation to assist with breathing, continuous intravenous medications, and dialysis for patients with kidney failure. These interventions help stabilize patients and support their organ function.

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Frequently Asked Questions

The Frequently Asked Questions (FAQ) section of a hospital website typically addresses common inquiries that patients, visitors, and the general public might have. These questions often cover a wide range of topics related to hospital services, policies, procedures, and logistics.

- What are the hospital's hours of operation?
  Our hospital is open 24/7. Outpatient services are available Monday to Friday, 8 AM to 6 PM.
- Where is the hospital located?
- How can I contact the hospital?
- How do I schedule an appointment?
- Do I need a referral to see a specialist?

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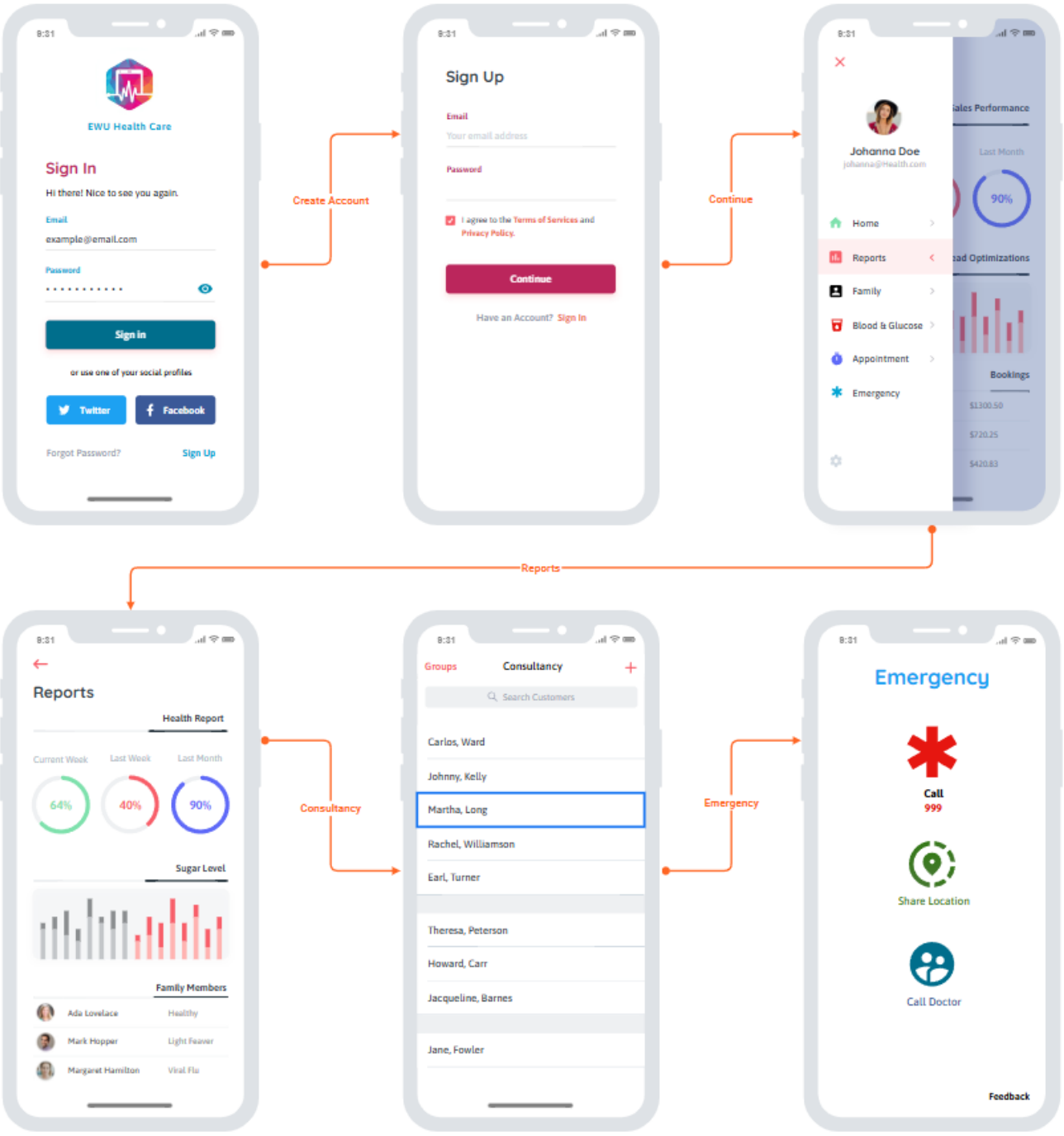
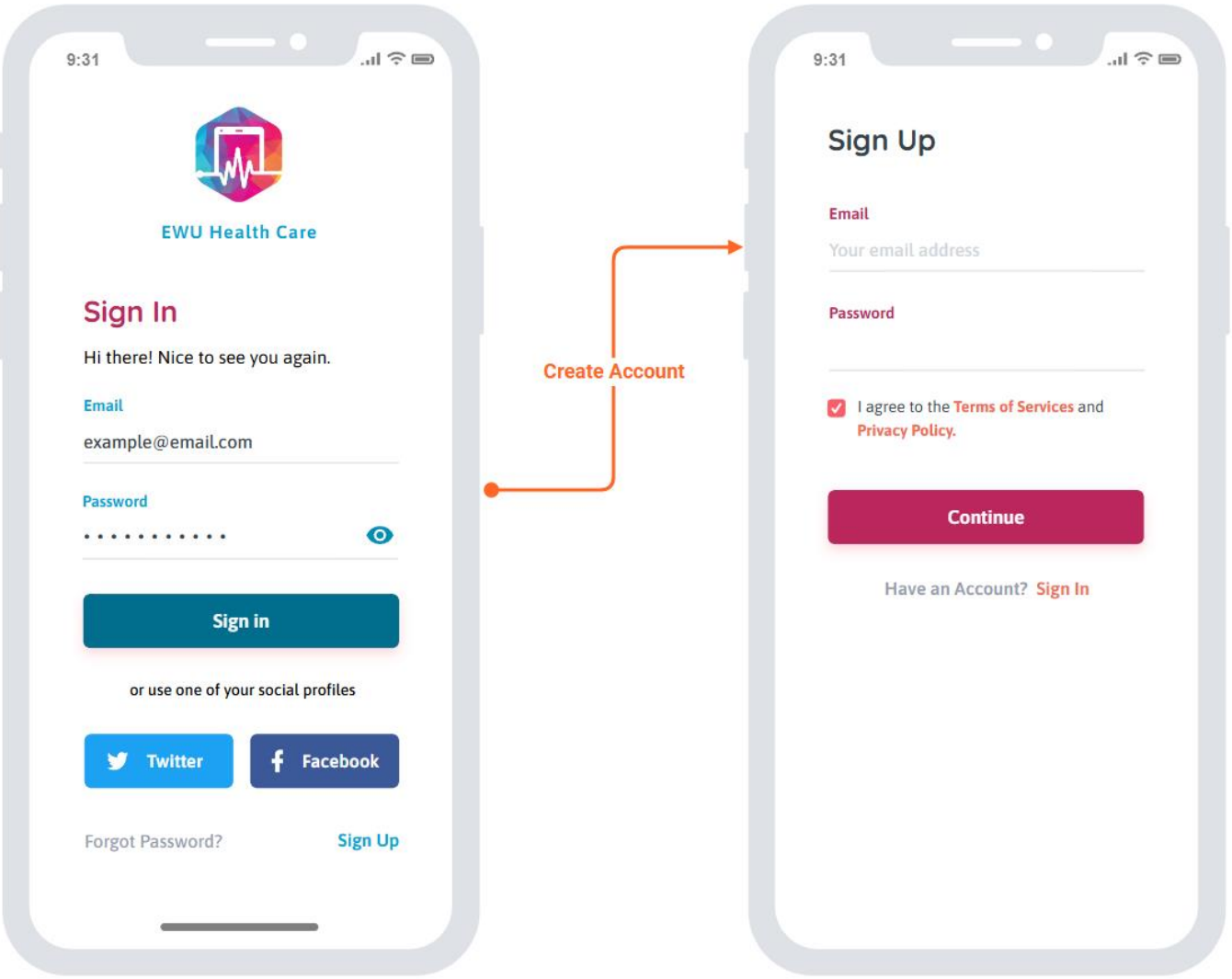
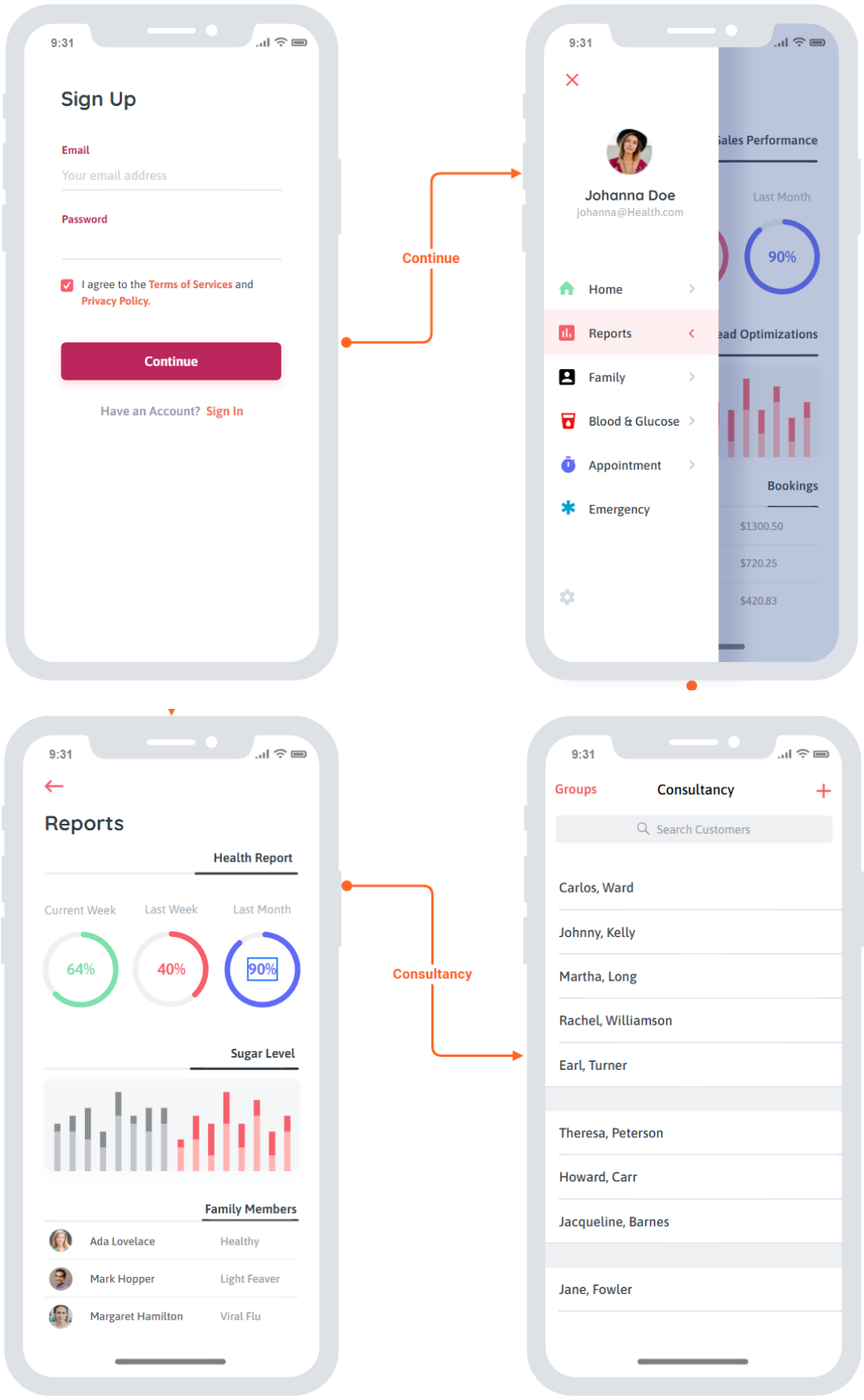
12.2. Mobile App




9:31
EWU Health Care
Sign In
Hi there! Nice to see you again.
Email
example@email.com
Password
Sign in
or use one of your social profiles
Twitter
Facebook
Forgot Password?
Sign Up
Create Account
9:31
Sign Up
Email
Your email address
Password
I agree to the Terms of Services and Privacy Policy.
Continue
Have an Account? Sign In


9:31
Sign Up
Email
Your email address
Password
I agree to the Terms of Services and Privacy Policy.
Continue
Have an Account? Sign In
Continue
9:31
Johanna Doe
johanna@Health.com
Home
Reports
Family
Blood & Glucose
Appointment
Emergency
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$720.25
$420.83
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Health Report
Current Week
Last Week
Last Month
64%
40%
90%
Sugar Level
Family Members
Ada Lovelace
Healthy
Mark Hopper
Light Feaver
Margaret Hamilton
Viral Flu
Consultancy
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Groups
Consultancy
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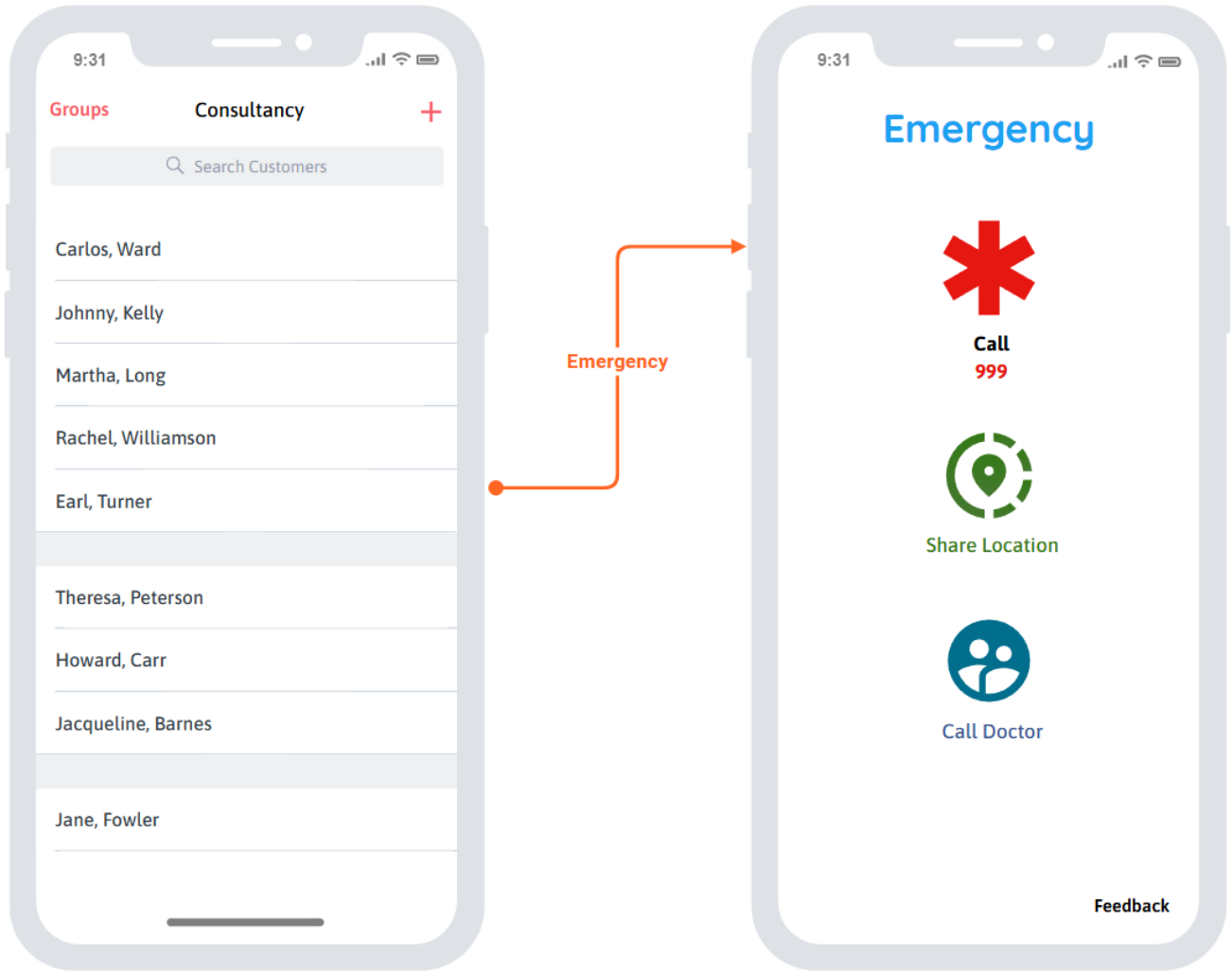
Johnny, Kelly
Martha, Long
Rachel, Williamson
Earl, Turner
Theresa, Peterson
Howard, Carr
Jacqueline, Barnes
Jane, Fowler



13. Conclusion:

The healthcare app for individuals offers a comprehensive solution for effective disease management by integrating functionalities like glucose monitoring, dietary recommendations, meal tracking, medication reminders, activity planning, continuous monitoring, telehealth consultations, emergency response, and health insights.

This app empowers users with real-time health data, facilitating informed decisions about their daily routines and long-term health strategies. It enhances the quality of life, supports timely medical assistance, and promotes a proactive approach to health management, making it an essential tool for improving health outcomes and providing peace of mind for users.

14. Contribution:

Name, ID	Task Performed
Sadia Mahbub Chowdhury (2020-1-60-245)	Data Flow Diagram Component Diagram
Rajia Afrin Rima (2021-2-60-029)	Sequence Diagram
Md. Ripon Al Mamun (2021-2-60-083)	Website Activity Diagram Deployment Diagram
Md. Asadullah Asad (2021-2-60-117)	Use Case Diagram
Md. Sakibur Rahman (2021-3-60-057)	Mobile App Class Diagram Activity Diagram Deployment Diagram