American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science & Technology (FST)

Disease Free Tomorrow

A Software Requirement Engineering Project Submitted
By

Semester: SPRING_23_24		**Section:**	**Group Number:**	
SN	Student Name	Student ID	Contribution in % (CO+CO2)	Individual Marks
07	Dola, Dosina Dolon	20-42034-1	40%	
05	Ratul Bin Anis Adnan	19-41823-3	33%	
31	Suraiya Yasmin Likhi	21-45921-3	27%	

The project will be Evaluated for the following Course Outcomes

EVALUATION CRITERIA	Total Marks (50)	
Introduction, Format, Submission, Defense	[10 Marks]	
System Overall Description & Functional Requirements	[10 Marks]	
System Quality Attributes and Project Requirements	[10 Marks]	
UML and E-R Diagram with Data Dictionary	[10 Marks]	
UI/UX Prototyping	[10 Marks]	

Software Requirements Specification

for

Disease Free Tomorrow

Version 10.0 approved

Prepared by

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<11.05.2024>

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Revision History

Name	Date	Reason for Changes	Version
Ratul Bin Anis	16.02.2024	New features implementation and brain storming	1.0
Ratul Bin Anis	02.03.2024	Research and analysis stakeholders and others	2.0
Ratul Bin Anis	27.03.2024	Class diagram updating with changing features	3.0
Suraiya Yasmin Likhi	03.04.2024	Product functional upgradation	4.0
Suraiya Yasmin Likhi	15.04.2024	ER diagram update	5.0
Ratul Bin Anis	16.04.2024	Intended Audience and Reading Suggestions upgradation	6.0
Dosina Dolon Dola	18.04.2024	System Features Brainstorming and planning	7.0
Dosina Dolon Dola	19.04.2024	3.1 System Features Description Writing	7.1
Dosina Dolon Dola	20.04.2024	3.1 System Features Revised	7.2
Dosina Dolon Dola	23.04.2024	Use Case Diagram Drawing	7.3
Dosina Dolon Dola	24.04.2024	3.1 System Features Revised and Updated	7.4
Dosina Dolon Dola	25.04.2024	Use Case Diagram Modified	7.5
Dosina Dolon Dola	27.04.2024	3.2 Non-functional Requirements writing	7.6
Dosina Dolon Dola	28.04.2024	3.3 Project Requirements writing	7.7
Dosina Dolon Dola	30.04.2024	3.2 Non-functional Requirements Modified	7.8
Dosina Dolon Dola	01.05.2024	3.3 Project Requirements Modified	7.9
Dosina Dolon Dola	06.05.2024	Activity Diagram Draft Sketching and Drawing	8.0
Dosina Dolon Dola	07.05.2024	3.3 Project Requirements revised, UI brainstorming	8.1
Dosina Dolon Dola	08.05.2024	UI Designing	8.2
Dosina Dolon Dola	09.05.2024	UI Designing, System requirements revised and updated	8.3
Ratul Bin Anis	10.05.2024	Data Dictionary update, Error Fixing	9.0
Dosina Dolon Dola	10.05.2024	Document Revision, Error Fixing	10.0

1. Introduction

1.1 Purpose

- Disease Free Tomorrow is a universal application also a website that will connect the people of a country to make free from disease. Not only prevention but also online doctor consultation, medicine purchasing, automated AI based consultation for regular issues of human, hospital with an advanced data-based system by the government.
- The online Disease Data & Prevention Management System will include features for both users and admin with a great virtual system. User will be able to login at website also application (android and IOS both), search for specific disease with online consultation for prevention, search for hospitals (admissible), User registration, User Authentication, Admin Dashboard, Emergency medical help with ambulance service, add medicine items or other stuffs to their shopping cart and completely purchases securely. Administrators will have access to features such as inspections, inquiries, action against complain, able to deploy urgent forces in any serious condition also with generate reports with survey.
- This Disease Free Tomorrow will provide us the best solution for prevention such as disease based online consultation, disease based medicine with needed hospital (no need to search for hospital because the AI based system will prefer the required hospital) also with a great data of patients in that particular area of country with their diseases. For being a huge service of this user have to pay a subscription fee first time than they have to renew it after a certain time, can purchase medical items if it is available or not in country. This system will be a online global market. Doctors can make a paid profile on this system that can make money online from this online consultation by patient.
- This system is being about to need a long process and a good maintenance. This system can be represents so many stakeholders like an example Doctors can make their profile here and for being active the profile, they should keep going by paying. Government, medicine companies will be in the online platform here because it is also will be like a online market. People will going to not only buy medical products but also they can pay online by online payment systems like Bkash, Nagad, Rocket. This payment systems related to the banks. So,banks are can be our stakeholder by the payment of customers. There will be some share from their profitable amount.
- This software requires -
    - Stakeholders
    - Analyst
    - Market researchers
    - Doctors
    - Programmers
    - Projects manager with a team
    - Workshops
    - IT specialist
    - Other executives

1.2 Document Conventions

This project document has written by using format:

- Headings:
  Times New Roma (Bold Font size:14)
- Other Text:
  Times New Roma (Font size:12)

1.3 Intended Audience and Reading Suggestions

The intended readers for this document include:

- Developers
- Project managers
- Marketing staffs
- Doctors
- Hospital authorities (subscribed)
- Users
- Testers
- Medicine Suppliers
- Delivery man
- Pharmacies

User-Focused Sections:

For general users:

- Features available to users, such as disease search and prevention consultation, hospital search, emergency medical help, and medicine purchasing.
- Understand the user registration process, authentication, and the user experience on both the website and the mobile applications (Android and iOS).

For individuals seeking medical assistance:

- Explore how the platform offers online doctor consultation and access to disease-specific medicine and hospitals.

Admin-Focused Sections:

For administrators:

- The features and tools available on the admin dashboard for managing the system.
- The process for handling complaints, inspections, inquiries, and urgent situations.
- Generating reports and conducting surveys for data analysis and decision-making.
- The subscription model, including initial fees and renewal processes.
- The availability of medical items and the online global market aspect.

Stakeholder Analysis:

The stakeholders involved in the project, such as doctors, programmers, market researchers, IT specialists, executives, and government officials. Understand the roles and contributions of each stakeholder group to the success of the project.
Consider the implications of stakeholder involvement on the development, maintenance, and sustainability of the system.

Technical Requirements and Resources:

The resources required for developing and maintaining the software, including programmers, project managers, workshops, and IT specialists. Understand the technical aspects of the system, including data management, security measures, and payment systems integration. Consider the long-term maintenance and support needs of the software.

1.4 References

- Disease Free Tomorrow Development Team. (2024). Disease Free Tomorrow UI Style Guide .
- Legal Department, Disease Free Tomorrow Organization.Service Agreements with Stakeholders.
- Disease Free Tomorrow Development Team. (2024). Disease Free Tomorrow Use Cases.
- Disease Free Tomorrow Development Team. (2024). Disease Free Tomorrow Vision and Scope.

2. Overall Description

2.1 Product Perspective

- The development of this project is driven by the pressing need for a comprehensive health-care solution that addresses various challenges faced by individuals and health-care systems. These challenges include:
- Limited access to health-care services, especially in remote or underprivileged areas.
- Lack of timely information and resources for disease prevention and management.
- Inefficient utilization of health-care resources leading to increased health-care costs and burden on health-care systems.
- Difficulty in accessing quality health-care services during emergencies or disease outbreaks.

- This software is a new, self-contained product aiming to revolutionize the health-care sector by leveraging technology to provide accessible, affordable, and efficient health-care solutions. While it is not a replacement for existing health-care systems, it complements them by offering additional services and resources that enhance disease prevention and management efforts.
- The business objectives of this project include:

Improving public health outcomes:

- The aims to improve public health by providing timely access to health-care services and information.
- It achieves this by offering online consultations for early disease detection and prevention, empowering users to make informed health decisions promptly.
- Educational resources and symptom checklists help users take proactive steps towards better health outcomes.

Enhancing health-care accessibility and affordability:

- The platform ensures health-care is accessible to everyone, regardless of location or socioeconomic status.
- Web and mobile applications make health-care services easily reachable, eliminating barriers like transportation costs and long wait times.
- Subscription-based models keep health-care services affordable and inclusive for all users.

Facilitating efficient resource utilization:

- Disease Free Tomorrow optimizes health-care resource allocation through data analytics and AI-driven technologies.
- Data-driven decision-making enhances efficiency in disease management and resource allocation.
- Automated processes like appointment scheduling streamline administrative tasks, improving work-flow efficiency.

Generating revenue for sustainability:

- Multiple revenue streams, including subscription fees and paid online consultations, ensure the platform's sustainability.
- Health-care professionals can earn through the platform by offering paid consultations.
- Online sales of medical products contribute to financial sustainability and scalability.

Fostering collaboration among stakeholders:

- The platform serves as a collaboration hub for government agencies, health-care providers, and other stakeholders.
- Government agencies use it to disseminate public health information and coordinate efforts during emergencies.
- Collaboration among health-care providers, pharmaceutical companies, and financial institutions drives innovation and improves health-care access.

By addressing these objectives, Disease Free Tomorrow aims to transform the health-care landscape, empower individuals to take control of their health, and contribute to building healthier communities and nations.

2.2 Product Functions

The major functions of this product must perform:

1. **User Registration and Authentication**:
    - Allow users to create accounts and authenticate themselves securely.

2. **Online Consultation**:
    - Provide a platform for users to consult with health-care professionals remotely.

3. **Disease Information and Prevention**:
    - Offer information about various diseases and prevention measures.

4. **Hospital Search and Information**:
    - Enable users to search for hospitals, view their details, and locate them on a map.

5. **Complaint Submission and Management**:
    - Allow users to submit complaints related to disease outbreaks or health-care issues.

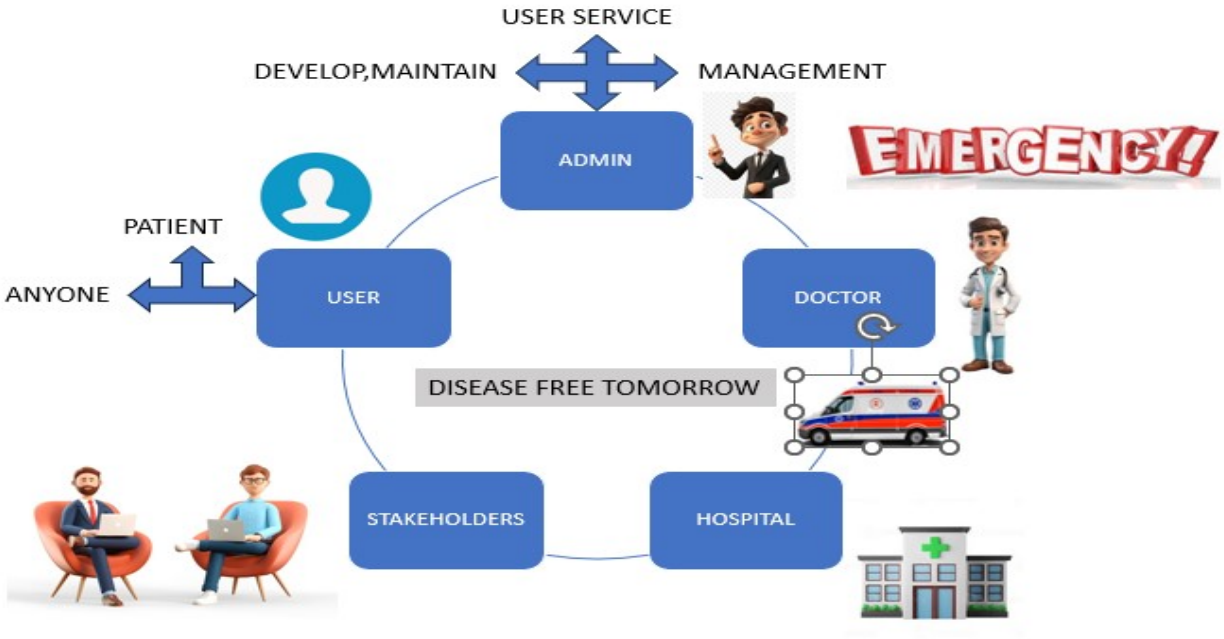
6. **Medicine Purchasing**:
    - Facilitate online purchase of medicines and health-care products.

7. **Secure Transactions**:
    - Ensure secure payment processing for purchases made through the platform.

8. **Administrator Dashboard**:
    - Provide administrators with tools to manage user complaints, oversee consultations, and generate reports.

9. **AI-Based System Integration**:
    - Incorporate AI-based systems for personalized disease prevention recommendations and hospital recommendations based on user needs.

10. **Stakeholder Collaboration**:
    - Facilitate collaboration between stakeholders such as health-care providers, pharmaceutical companies, and financial institutions.



2.3 User Classes and Characteristics

The anticipated user classes are as follows, differentiated based on various factors:

1.General Users:

- These users are individuals seeking health-care services, information, and products.
- They may vary in terms of frequency of use, technical expertise, educational level, and experience with using online health-care platforms.
- General users access a wide range of product functions, including online consultations, disease information, hospital search, medicine purchasing, and complaint submission.

2.Health-care Professionals:

- This user class comprises doctors, nurses, and other medical professionals.
- They possess specialized technical expertise in diagnosing and treating diseases.
- Health-care professionals primarily utilize functions related to online consultations, diagnosis, prescription, and medical advice provision.

3.Administrators:

- Administrators are responsible for managing and overseeing the platform's operations.

- They have elevated security and privilege levels compared to other user classes.
- Administrators engage in functions such as monitoring user activities, handling complaints, managing consultations, and generating reports.

4.Stakeholders:

- Stakeholders include government agencies, pharmaceutical companies, financial institutions, and other organizations involved in health-care.
- They may have varying levels of technical expertise and security clearance.
- Stakeholders interact with the platform to collaborate on initiatives, provide resources, and support health-care endeavors.

5.Technical Support Personnel:

- This user class consists of technical support staff responsible for maintaining platform functionality and addressing user issues.
- They possess advanced technical expertise and troubleshooting skills.
- Technical support personnel engage in functions related to resolving technical issues, maintaining system integrity, and implementing updates.

These user classes encompass a diverse range of individuals with varying needs, expertise levels, and responsibilities within this platform. Tailoring the product to accommodate the requirements and preferences of each user class is essential for ensuring a seamless and effective user experience.

2.4 Hardware and Operating Environment

For Disease Free Tomorrow, the software will operate in an environment that includes the following components:

Hardware Platform:

- The software will run on various hardware platforms, including desktop computers, laptops, smartphones, and tablets.
- It should be compatible with both low-end and high-end devices to ensure accessibility for users across different socioeconomic backgrounds.
- The hardware should support internet connectivity and meet the minimum system requirements for running the software smoothly.

Operating System and Versions:

The software should be compatible with multiple operating systems, including:

- Windows: Versions 7, 8, and 10.

- macOS: Versions 10.12 (Sierra) and above.
- Linux: Ubuntu, CentOS, and other popular distributions.
- Android: Versions 5.0 (Lollipop) and above.
- iOS: Versions 11 and above.

Compatibility with a wide range of operating systems ensures that users can access the software regardless of their device preferences.

Web Browsers:

- The software should support popular web browsers such as Google Chrome, Mozilla Firefox, Safari, Microsoft Edge, and Opera.
- Compatibility with multiple web browsers ensures a consistent user experience across different platforms and devices.

Back-end Infrastructure:

- The software will require a robust back-end infrastructure to support its functionality.
- This includes servers, databases, and other necessary components hosted either on-premises or in the cloud.
- The choice of back-end technologies (e.g., programming languages, frameworks, databases) should be scalable, secure, and capable of handling a large volume of user interactions and data processing tasks.

Integration with External Systems:

- The software may need to integrate with external systems or applications for certain functionalities.
- For example, integration with payment gateways is required for processing online transactions.
- APIs and other integration mechanisms should be utilized to seamlessly connect with external systems while maintaining data security and integrity.

Security Measures:

- The software must operate in a secure environment to protect user data and ensure compliance with privacy regulations.
- This includes implementing encryption protocols, access control mechanisms, and regular security audits.
- Additionally, the software should adhere to industry best practices for data protection and cyber security.

Overall, the software's environment should be versatile, scalable, and secure to accommodate the diverse needs of users while providing a seamless and reliable user experience across different platforms and devices.

2.5 Design and Implementation Constraints

For Disease Free Tomorrow, there are several items and issues that will limit the options available to the developers:

Regulatory Compliance:

- The software must adhere to regulatory standards and policies governing the health-care industry, including data privacy regulations such as HIPAA (Health Insurance Portability and Accountability Act) in the United States or GDPR (General Data Protection Regulation) in the European Union.
- Compliance with these regulations will influence data handling practices, security measures, and user consent mechanisms implemented in the software.

Security Considerations:

- Given the sensitive nature of health-care data, stringent security measures must be implemented to safeguard user information against unauthorized access, data breaches, and cyber attacks.
- Developers must adhere to industry best practices for secure coding, encryption, access control, and authentication mechanisms.

Interoperability with Health-care Systems:

- The software may need to interface with existing health-care systems, electronic health records (EHRs), laboratory information systems (LIS), and other medical databases.
- Interoperability standards such as HL7 (Health Level Seven) may need to be followed to ensure seamless data exchange and integration with external systems.

Technological Compatibility:

- The choice of technologies, tools, and frameworks may be limited by compatibility requirements with existing infrastructure and development environments.
- For example, compatibility with legacy systems or specific hardware configurations may influence technology selection and system architecture decisions.

Language and Localization:

- The software may need to support multiple languages and localization options to cater to users from diverse linguistic and cultural backgrounds.
- Developers must consider language requirements and localization practices during the design and development phases to ensure a user-friendly experience for all users.

Scalability and Performance Requirements:

- The software must be capable of handling a large volume of users, data transactions, and concurrent requests without compromising performance or system responsiveness.
- Hardware limitations, network bandwidth, and resource constraints may impose restrictions on scalability options and performance optimization strategies.

Maintenance and Support Considerations:

- The customer's organization may be responsible for maintaining and supporting the delivered software post-deployment.
- Developers must adhere to design conventions, programming standards, and documentation practices that facilitate ease of maintenance, troubleshooting, and future enhancements by the customer's IT team.

Addressing these items and issues effectively during the software development life-cycle is crucial for ensuring the successful delivery, deployment, and operation of Disease Free Tomorrow while meeting the needs and expectations of stakeholders and regulatory requirements.

2.6 User Documentation

For this project, the following user documentation components will be delivered along with the software to ensure users can effectively utilize its features and functionalities:

User Manual:

- A comprehensive user manual will be provided to guide users through the installation process, account creation, and usage of various features.
- The manual will include step-by-step instructions, screenshots, and explanations of how to navigate the platform, access different functionalities, and troubleshoot common issues.

Online Help System:

- An online help system will be integrated into the software interface to provide contextual assistance and guidance to users as they interact with different features.

- Help articles, tool-tips, and contextual pop-ups will offer relevant information and tips to users based on their actions and queries within the platform.

Tutorials and How To Guides:

- Tutorials and how-to guides will be available to users to help them learn how to perform specific tasks or utilize advanced features of the software.
- These tutorials may include video demonstrations, interactive walk-through, or written guides with examples to illustrate key concepts and work-flows.

FAQ Section:

- A frequently asked questions (FAQ) section will be included to address common queries and concerns that users may encounter while using the software.
- The FAQ section will provide concise answers to questions related to account management, feature usage, troubleshooting, and platform policies.

Release Notes:

- Release notes will accompany each software update to inform users about new features, enhancements, bug fixes, and any changes to system requirements or compatibility.
- Users can refer to release notes to stay informed about the latest improvements and changes to the software and its functionalities.

Contact Information for Support:

- Contact information for customer support, including email addresses, phone numbers, and help-desk portals, will be provided to users for assistance with technical issues, inquiries, or feedback.
- Users can reach out to the support team for personalized assistance or guidance in using the software effectively.

By delivering these user documentation components along with the software, users will have access to comprehensive resources and support to maximize their experience with Disease Free Tomorrow and overcome any challenges they may encounter during usage.

The user documentation delivery formats and standards may include:

PDF Documents:

- User manuals, tutorials, and other instructional materials may be provided in PDF format for easy printing and offline access.
- PDF documents ensure consistent formatting and readability across different devices and platforms.

Online Help System:

- The online help system integrated into the software interface may follow standard web-based documentation formats and structures.
- It should be accessible directly from within the software, providing context-sensitive assistance to users as they navigate different features and functionalities.

HTML or Markdown Documentation:

- Tutorials, how-to guides, and FAQs may be authored in HTML or Markdown formats for easy online publishing and accessibility.
- HTML or Markdown documentation can be hosted on the software's website or knowledge base, accessible to users through web browsers.

Interactive Tutorials:

- Interactive tutorials may be provided in formats such as video demonstrations, interactive walk-thorough, or simulation-based training modules.
- These tutorials enhance user engagement and understanding by providing visual and interactive guidance on using various features of the software.

Structured Documentation Formats:

- User documentation may follow structured formats such as DITA (Darwin Information Typing Architecture) or DocBook to ensure consistency, modularity, and reusability of content.
- Structured documentation formats enable efficient content management, localization, and updates over time.

Accessibility Standards:

- User documentation should adhere to accessibility standards such as WCAG (Web Content Accessibility Guidelines) to ensure that it is accessible to users with disabilities.

- This includes providing alternative text for images, ensuring proper document structure, and supporting keyboard navigation and screen reader compatibility.

Version Control and Revision History:

- Documentation delivery may involve version control systems and revision history tracking to manage changes, updates, and contributions from multiple authors.
- Version control systems ensure that users have access to the most up-to-date and accurate documentation at all times.

By adhering to these known user documentation delivery formats and standards, Disease Free Tomorrow can ensure that users have access to high-quality, consistent, and accessible documentation that enhances their experience with the software.

3. System Requirements

3.1 System Features

1. User Authentication and Registration

Functional Requirements (FRs):

1.1 The software shall allow new users to register an account with Full Name, Mobile Number/Email and Password.
1.2 Then the users shall receive a random verification code in their given mobile number/email for verifying their user account.
1.3 The system shall allow users to log into their account using their registered mobile number/email and password.
1.4 If user forget their password, the system shall provide an option to reset their password by getting a random generated verification code om their registered email/mobile number.
1.5 If user try to login with invalid username/mobile/email and/or password, the system will show them a prompt and ask them to reset their password by using Forget Password functionality.

Priority Level: High
Precondition: Users must provide valid personal information during registration.
Cross-references: 2.1, 2.4, 3.2, 4.3

2. Software Login

Functional Requirements (FRs):

2.1 The system shall allow the users to log in by using their registered username and password.
2.2 The software will verify the user account credentials with stored data in the database.
2.3 After successful login, the software shall redirect the user to the home page.
2.4 If the login attempt fails due to incorrect username or password, the system shall notify the user and show them a prompt to try again.
2.5 After five consecutive failed login attempts, the system shall sent a randomly generated verification code to the user's phone/email address to retry login.
2.6 The system shall provide an option for users to reset their password if they forget it.
2.7 After successful login, the system shall allow the user to update their personal information (such as name, age, gender, height, weight, email).
2.8 After successful login, the user will be able to change their password.
2.9 If any users (such as doctors, hospitals, pharmacies) want to add an extra security to their account, they can add 2 step verification on their account after successful login. (Optional)

Priority Level: High
Precondition: User must have a registered account and valid login credentials.
Cross-references: 1.3

3. Online Doctor Consultation

Functional Requirements (FRs):

3.1 All users (both registered and unregistered) shall be able to browse the list of available doctors and access search filter functionality (e.g. based on doctors' speciality).
3.2 The registered users shall be allowed to book appointments with the available doctors by filling up an simple booking form with some general information (such as name, age, problem, preferred date and time).
3.3 The system will assign a doctor to the patient's account on the basis of patient's problem and availability of the doctor at that time.
3.4 The doctor will also get a notification about the consultation request.
3.5 After the doctor confirmed the consultation request, the booking will be confirmed.
3.6 After a successful booking, the user will get a confirmation notification along with a sms on their phone/mail on their email with the appointment details.
3.7 Upon successful booking, the doctor's ID shall be added to the patients consultation dashboard with the consultation details and the patient's ID shall be added to the doctor's consultation dashboard with the patient details.

3.8 During the consultation, patients can communicate with their assigned doctors through video/audio calls using the free calling feature of the system.
3.9 Users will get their prescriptions and will be able to access their consultation history in their account.

Priority Level: High
Precondition: User must be registered and must have an active subscription
Cross-references: 2.1, 5.4

4. Online Medicine and Medical Items Purchasing

Functional Requirements (FRs):

4.1 All users (both registered and unregistered) shall be able to search medicines and medical items
4.2 All users shall be able to add medicines to their shopping cart.
4.3 Only registered users will be able to checkout their medicines & other medical items and can make a purchase.
4.4 The users need to upload their prescription to order some specific medicines that are not allowed to sell without prescriptions.
4.5 based on customers locations, the nearest pharmacy/medical shop will get the order.
4.6 The application shall support multiple payment options (such as Bkash, Nagad, Rocket, Visa card, Mastercard etc) for purchasing medicines.
4.7 After placing a successful order, the user shall get an order invoice with the details including estimated delivery time.
4.8 The user can see the status of their order and track their parcel in real-time.

Priority Level: High
Precondition: User must be authenticated, have an active subscription and give location permissions.
Cross-references: 1.1, 1.3, 2.1

5. AI-based Consultation

Functional Requirements (FRs):

5.1 For common health issues, the system shall provide an option for AI-based consultations.
5.2 Users will input their symptoms and receive an immediate advice from the AI system.
5.3 AI consultation results will be based on medical knowledge and data analytics.
5.4 If AI encounter the symptoms serious or further medical advice is needed, the AI system will recommend a doctor.

5.5 The users will have the access to their AI consultations history within their account.

Priority Level: High
Precondition: The application must be installed into user's phone and have a internet connection.
Cross-references: 3.1, 3.3, 4.1, 6.1

6. Search and Filter for Hospitals

Functional Requirements (FRs):

6.1 All users (both registered and unregistered) shall be able to search for hospitals and shall be able to access search filter functionality (such as location, specialization, and ratings).
6.2 The system will show suggestions of nearby hospitals based on the user's live location.
6.3 The software shall provide the detailed information to the registered users about each hospital, including available seats, contact details, and services offered.
6.4 Registered users can book seats, appointments and services which are provided by the hospitals directly through the system.
6.5 The users will get a live location on map to find the location of their selected hospital.

Priority Level: Medium
Precondition: User must be authenticated and have an active subscription.
Cross-references: 1.1 ,1.3, 2.1

7. Ambulance and Emergency Medical Help Services

Functional Requirements (FRs):

7.1 All users (both registered and unregistered) shall be able to request emergency medical help / call ambulance through the system.
7.2 The system shall provide contact of nearby emergency medical help / nearby ambulance based on the user's live location and connect them in their dashboard.
7.3 Both user and ambulance/emergency medical help shall have the option of contacting each other using the free calling feature of our system.
7.4 After confirming the ambulance, user's live location will be shared and user shall get the real time updates of estimated arrival time of ambulance / emergency medical service.
7.5 The system shall store the records of user's emergency service / ambulance requests for future reference.

Priority Level: High
Precondition: User must be authenticated and provide location permissions.
Cross-references: 5.1

8. Admin Dashboard

Functional Requirements (FRs):

8.1 Administrators can manage the platform through a centralized dashboard.
8.2 The dashboard shall allow administrators to monitor user activity, manage complaints, and emergency requests.
8.3 Administrators can view analytics and reports on system usage and performance.

Priority Level: High
Precondition: Admin authentication required.
Cross-references: 2.1, 2.4

3.2 Non-Functional/Quality Requirements

QA1: Usability: Users shall be able to find the application easy to use, navigate features and functionalities with clear instructions and relevant icons/pictures, and minimal learning curve to use the system. User shall be able to request any of our service with minimal steps.

Priority Level: High
Precondition: N/A
Cross-references: QA6, QA9

QA2: Performance: The system will ensure rapid response to user interactions with minimal response delay. The system aims for a seamless user experience with an average response time of less than 3seconds for all major functionality.

Priority Level: High
Precondition: Requires stable internet connection on user end.
Cross-references: QA4, QA5

QA3: Security: The application will protect user data through encryption and maintain confidentiality. It will also ensure integrity and availability of user data. The system will have secure authentication process to verify users, and routine security checkups. Additionally, the application will have a secure payment gateway for transactions to ensure protection of financial information.

Priority Level: High
Precondition: Compliance with relevant data protection regulations.
Cross-references: QA7

QA4: Scalability: The system will be able to handle big data volume, growing number of users and transactions seamlessly without any latency and degradation in performance.

Priority Level: High
Precondition: Regular load testing to identify scalability bottlenecks.
Cross-references: QA2, QA5

QA5: Reliability: The application should run consistently without any unexpected crashes and downtime for maintenance for smooth user experience. The system aims for a minimum of 99.8% uptime.

Priority Level: High
Precondition: Proactive maintenance and regular system monitoring.
Cross-references: QA4, QA8

QA6: Accessibility: With a simple user-friendly and interactive interface, users of all ages can use the application easily. Users with disabilities will also be able to access the application. It will be make sure that the system will meet accessibility standards, so that it will works with screen readers, keyboard navigation, and alternative input methods. Users of all ages will be able to use the application easily. Aim is to make the application user-friendly for everyone.

Priority Level: Low
Precondition: Accessibility testing with users of diverse abilities to verify accessibility standards.
Cross-references: QA1, QA9

QA7: Compliance: The system shall comply with relevant regulatory standards and industry best practices, including health-care data privacy regulations, data protection laws and medical ethics guidelines.

Priority Level: High
Precondition: Regular audits and updates to ensure ongoing compliance with regulations.
Cross-references: QA3

QA8: Maintenance: The application will be easy to maintain and upgrade. The system will have a modular architecture with clear documentation and version control.

Priority Level: Medium
Precondition: Establish a dedicated team and procedures for maintenance.
Cross-references: QA5, QA7

QA9: Localization: We aim to make our application user-friendly to users who don't know English. Our application will support Bangla language along with English, allowing users to interact in their preferred language.

Priority Level: Medium
Precondition: Translation of user interface elements and contents into preferred language.
Cross-references: QA1, QA6

3.3 Project Requirements

1. Development Tools:

- Developers need IDEs (e.g. Visual Studio Code) for coding and debugging.
- For code management and collaboration, developers need version control system (e.g. Git).
- Developers need database management systems (e.g. MySQL, MongoDB) for data storage.

2. Testing Tools:

- Testers need test automation tools (Selenium or Appium) for automated testing for mobile app.
- Testers need performance testing tools (JMeter or Gatling) for load and stress testing.
- Testers need security testing tools (Burp Suite or OWASP ZAP) for identifying vulnerabilities in the system.

3. Collaboration Tools:

- For team communication and collaboration, communication tools (such as Slack or Microsoft Teams) is required.
- For task management and progress tracking, project management tools (such as Trello or Jira) is required.
- For sharing and editing project documentation, document collaboration tools (such as Microsoft Office 365 or Google Workspace) is required.

4. Deployment Tools:

- Cloud platform (such as Microsoft Azure or Google Cloud) is required for hosting and deploying the application.

5. Training and Support:

- Customer support channels (email support, online chat support and help desk system) is required for handling customer inquiries and issues.

- For on-boarding new team members, training materials and documentation is required.

6. Project Management:

- Regular team meeting is required for planning, status updates, resolving issues.
- Update project documentation is required including requirements documentation, design documentation and user manuals.
- Following a methodology (such as Agile, Scrum) is required for organizing and prioritizing tasks.

7. Quality Assurance:

- Quality assurance processes and procedures is required to ensure the quality and reliability of the application.
- Test plans, test cases, and test scripts are required to verify the functionality and performance of the application.

8. Security Measures:

- To identify and encounter potential security threats, regular security audits is required.
- To protect user data and prevent unauthorized access, implementation of security best practices and protocols is required.
- Compliance with industry standards and regulations related to data privacy and security is required.

4. Design and Interface Requirements

4.1 UML Diagrams

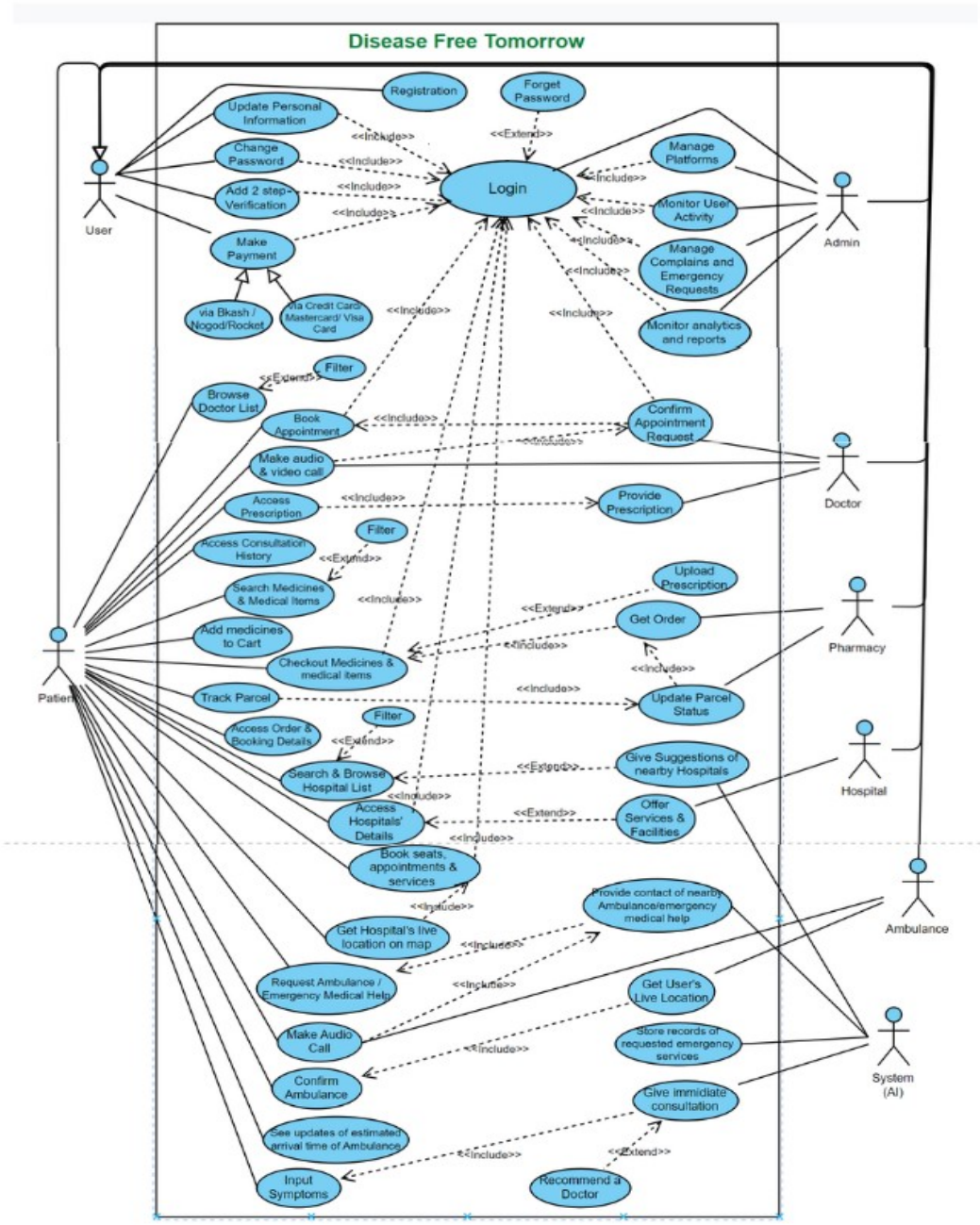


Figure 1 : USE CASE DIAGRAM

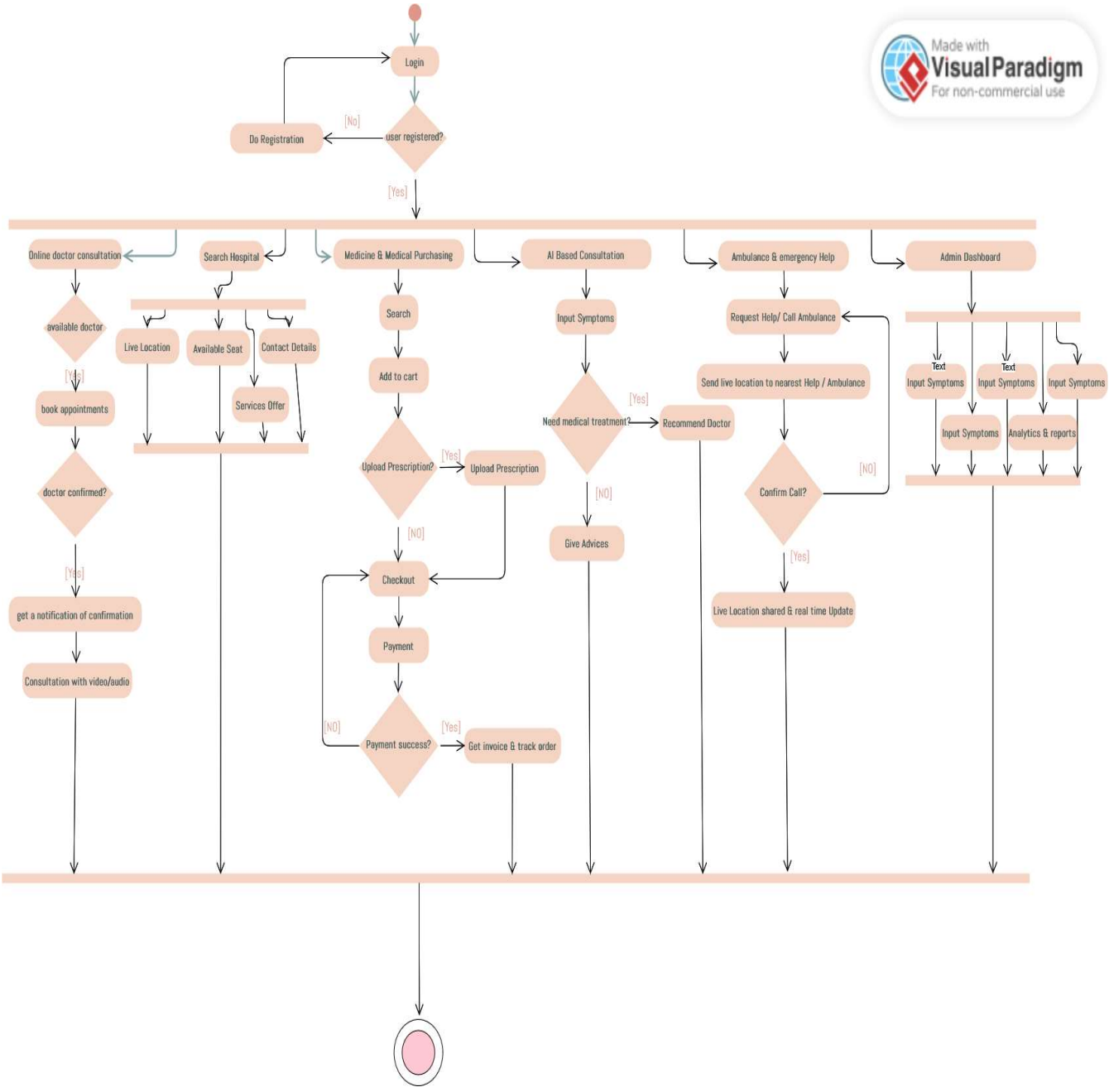


Figure 2 : ACTIVITY DIAGRAM

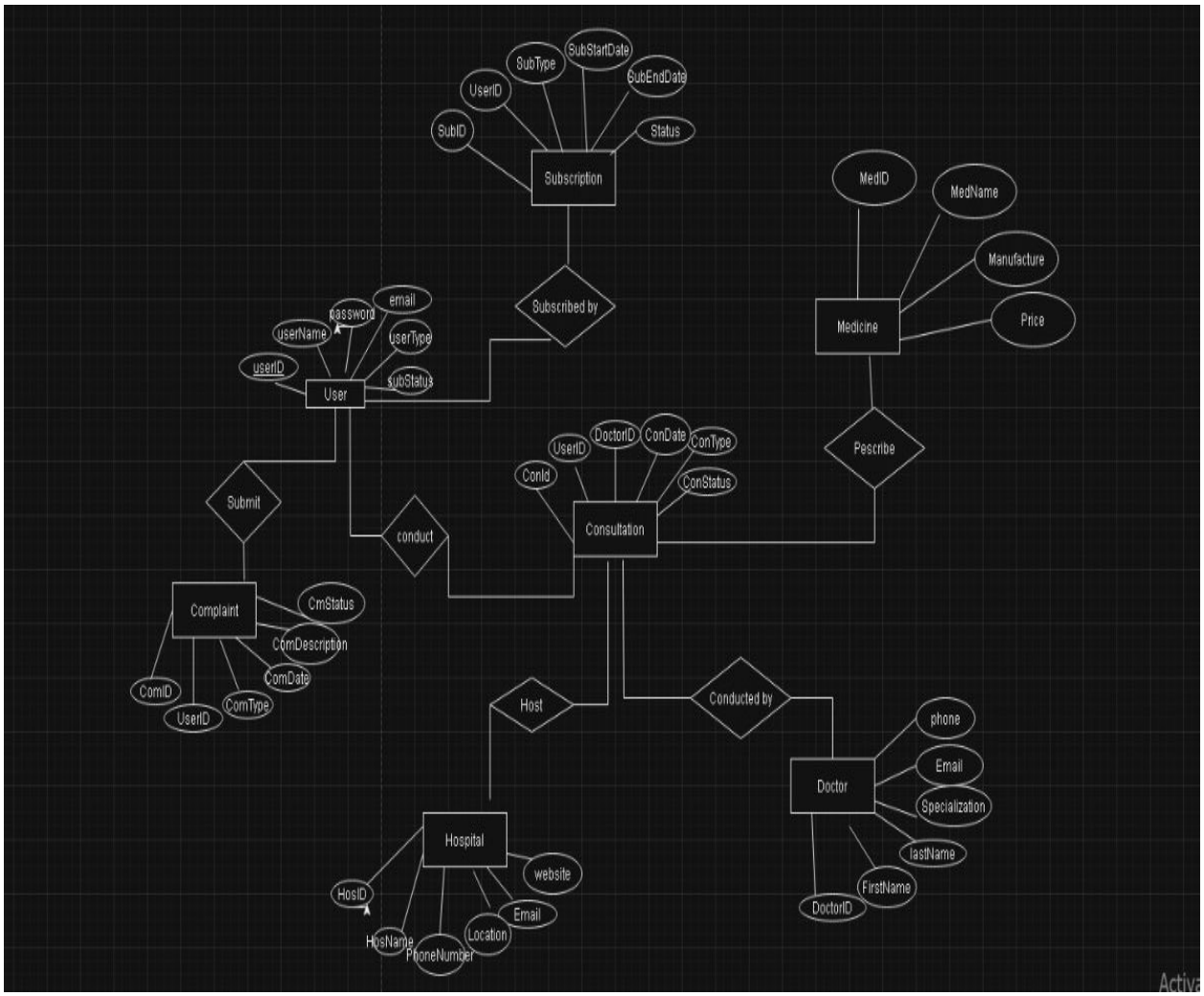


Figure 3 : ER DIAGRAM

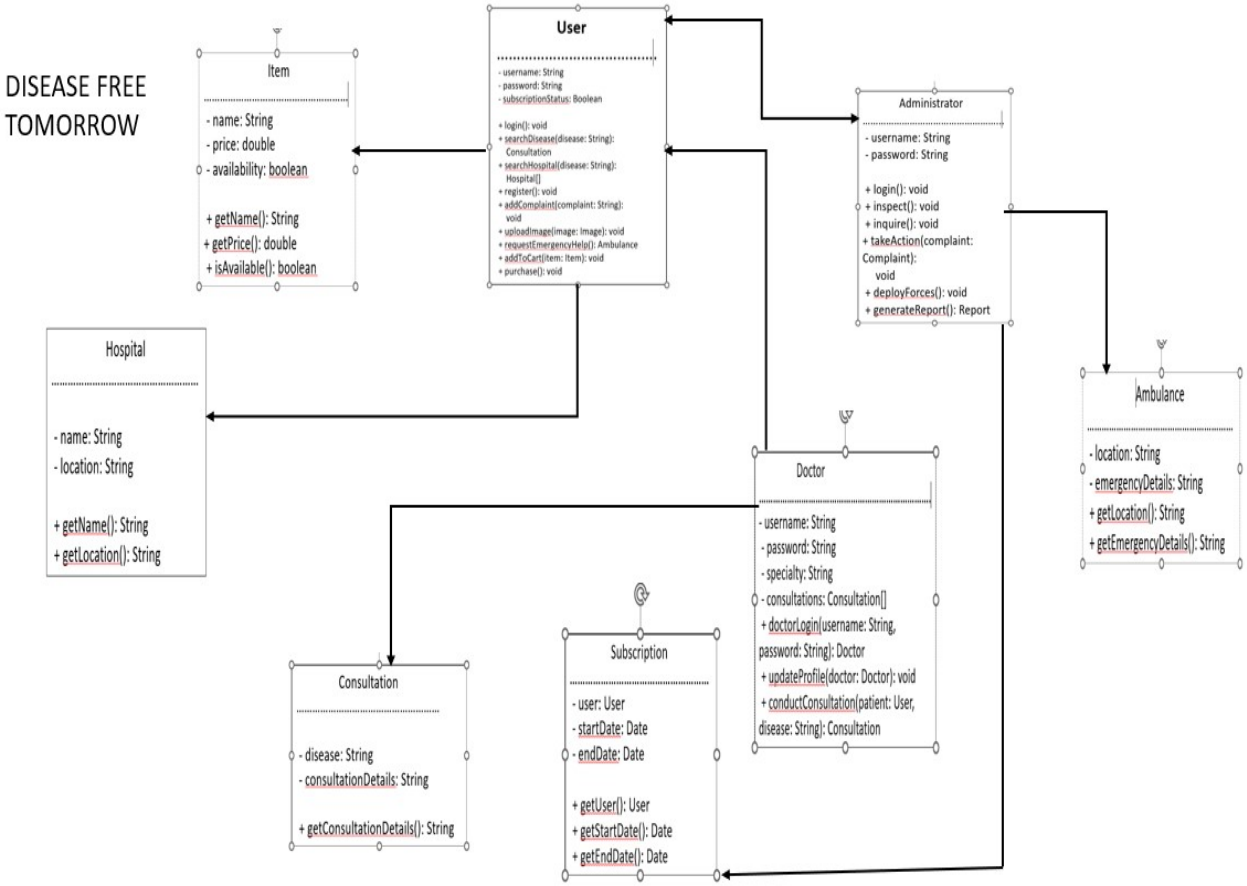


Figure 4 : CLASS DIAGRAM

4.2 Data Dictionary

Entity	Attribute	Type/Size	Validation	Key
User	UserID	Number (5)	10000-99999	primary
User	Username	Text (15)	Required	
User	Password	Number (8)	Required	
User	Subscription Status	Text (15)	Required	

Entity	Attribute	Type/Size	Validation	Key
Login	L id	Number (5)	10000-99999	Primary
Login	Email	Text (15)	Required	
Login	Password	Text (20)	Required	

Entity	Attribute	Type/Size	Validation	Key
Doctor	DoctorID	Number (5)	10000-99999	Primary
Doctor	Username	Text (15)	Required	
Doctor	Password	Number (8)	Required	
Doctor	Specialty	Text (15)	10000-99999	

Entity	Attribute	Type/Size	Validation	Key
Hospital	HospitalID	Number (5)	10000-99999	Primary
Hospital	Name	Text (15)	Required	
Hospital	Location	Text (50)	Required	

Entity	Attribute	Type/Size	Validation	Key
Pharmacies	PharmaciesID	Number (5)	10000-99999	Primary
Pharmacies	MedicineID	Text (15)	Required	
Pharmacies	Location	Text (50)	Required	
Pharmacies	MedicinePrice	Number (5)	10000-99999	

Entity	Attribute	Type/Size	Validation	Key
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Pharmacies	Location	Text (50)	Required	
Pharmacies	MedicinePrice	Number (5)	10000-99999	

Entity	Attribute	Type/Size	Validation	Key
Subscription	SubscriptionID	Number (5)	10000-99999	Primary
Subscription	UserID	Text (15)	Required	
Subscription	StartDate	Text (15)	Required	
Subscription	EndDate	Text (15)	Required	

Entity	Attribute	Type/Size	Validation	Key
Cart	CartID	Number (5)	10000-99999	Primary
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Cart	Items	Text (15)	Required	

Entity	Attribute	Type/Size	Validation	Key
Item	ItemID	Number (5)	10000-99999	Primary
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Entity	Attribute	Type/Size	Validation	Key
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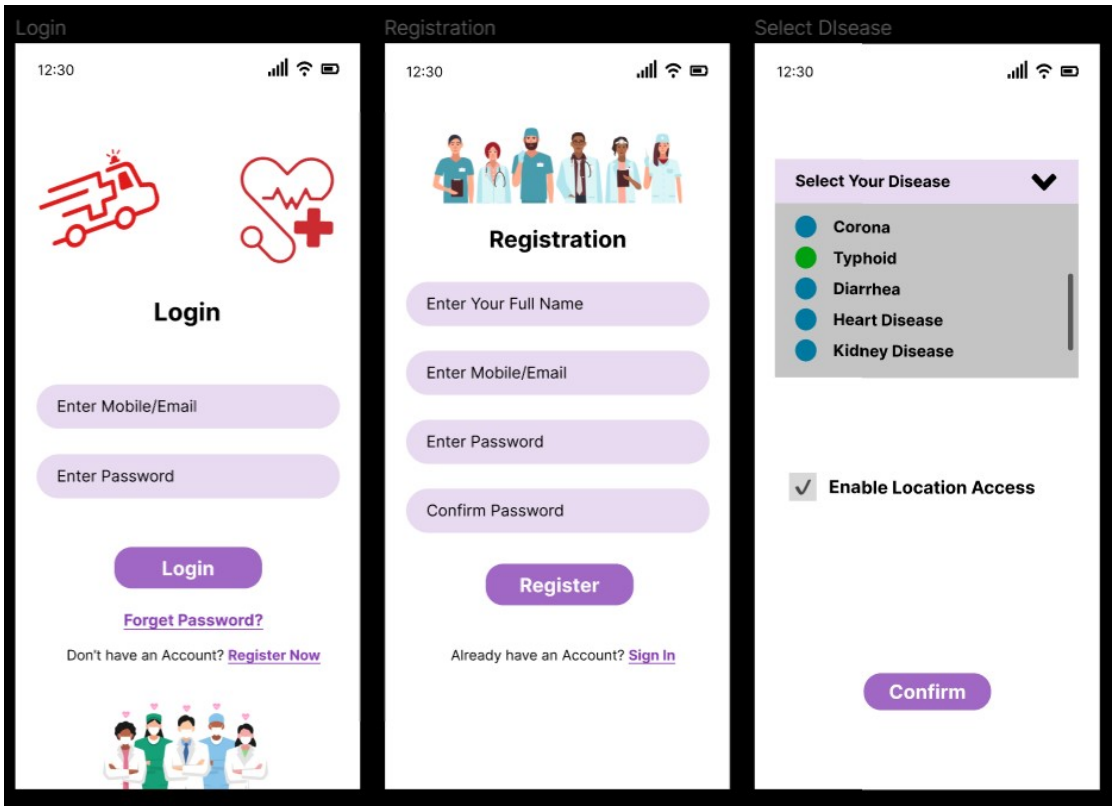
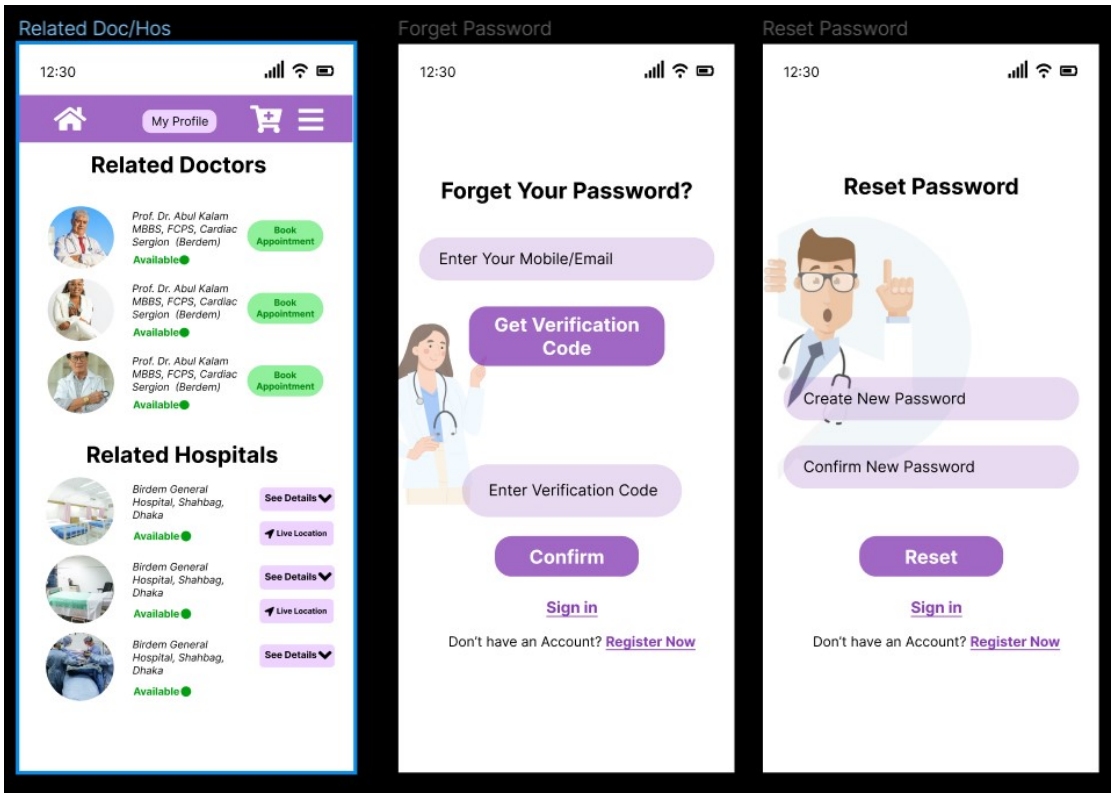
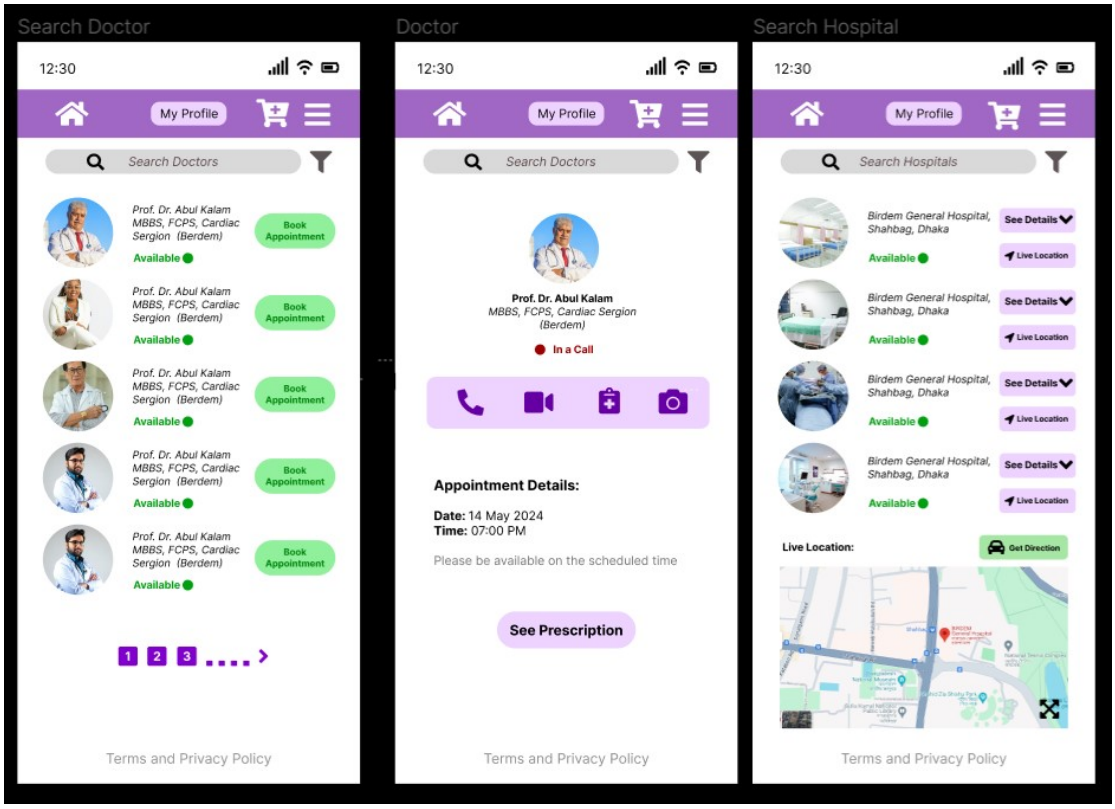
Transaction	Status	Text (15)	Required	

4.3 UI/UX Design Specification



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In a Call
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Time: 07:00 PM
Please be available on the scheduled time
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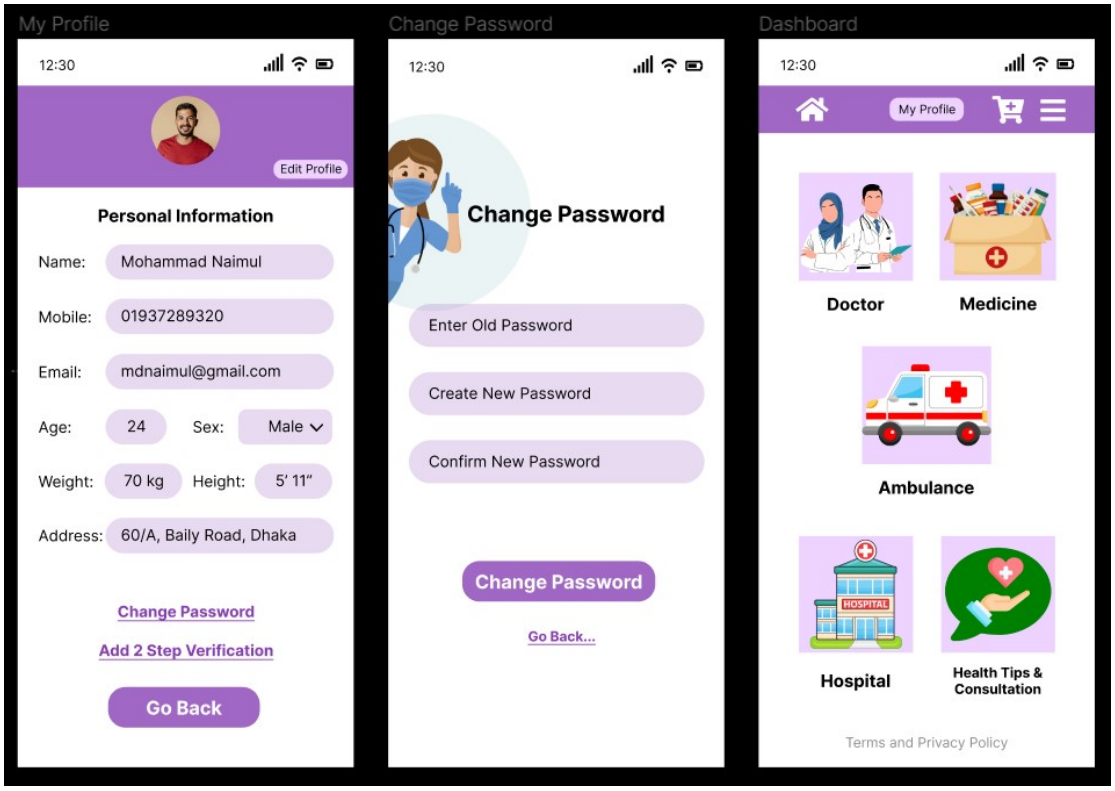
Terms and Privacy Policy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Edit Profile
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Email: mdnaimul@gmail.com
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Sex: Male
Weight: 70 kg
Height: 5' 11"
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Add 2 Step Verification
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Change Password
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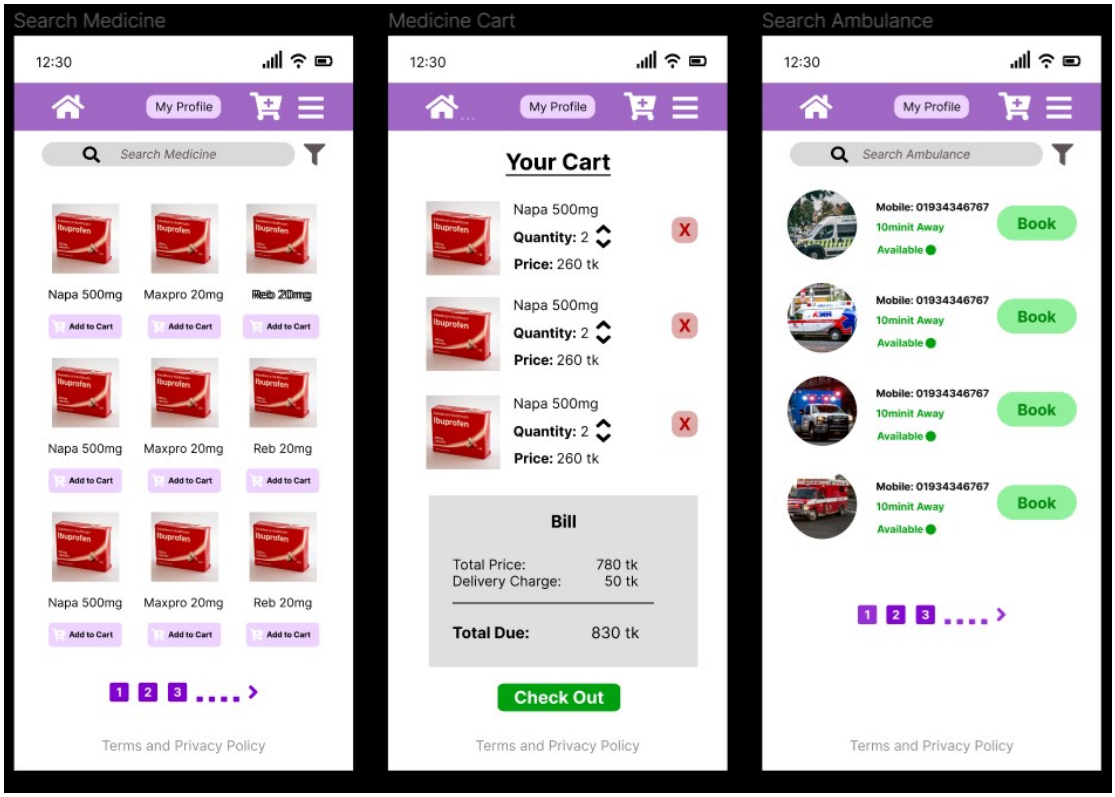
My Profile
Doctor
Medicine
Ambulance
Hospital
Health Tips & Consultation
Terms and Privacy Policy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Total Due: 830 tk
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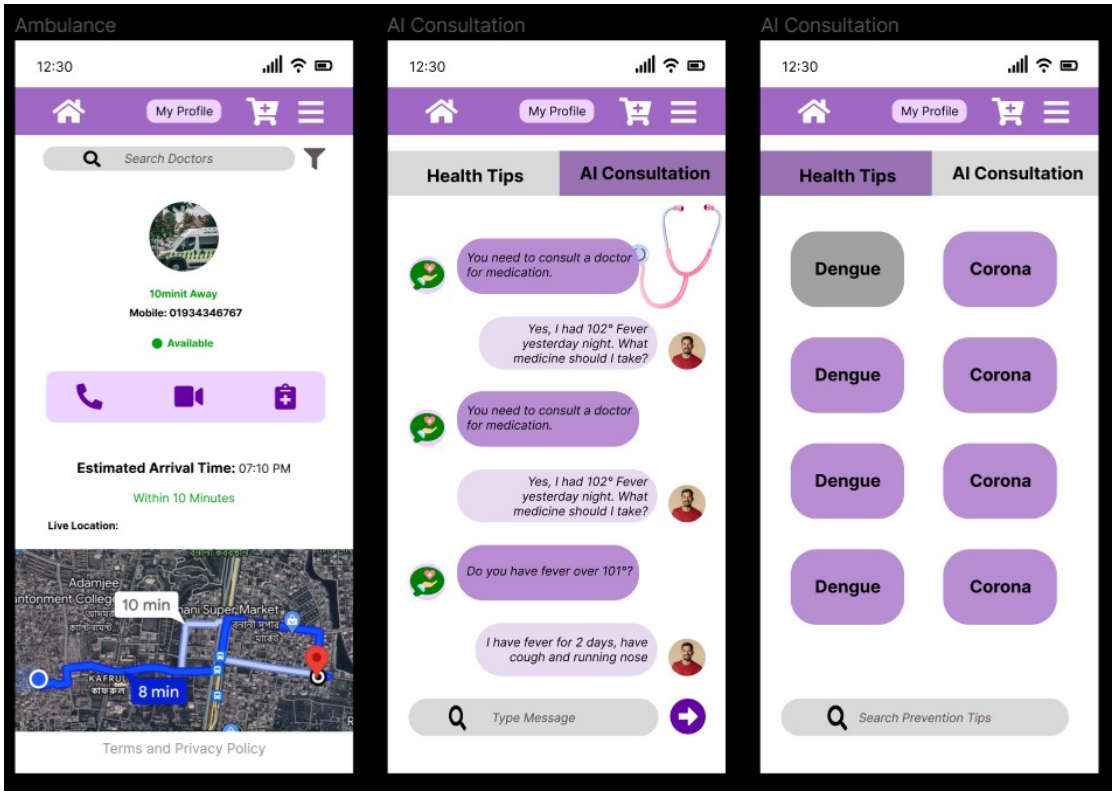
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Within 10 Minutes
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Health Tips
AI Consultation
You need to consult a doctor for medication.
Yes, I had 102° Fever yesterday night. What medicine should I take?
You need to consult a doctor for medication.
Yes, I had 102° Fever yesterday night. What medicine should I take?
Do you have fever over 101°?
I have fever for 2 days, have cough and running nose
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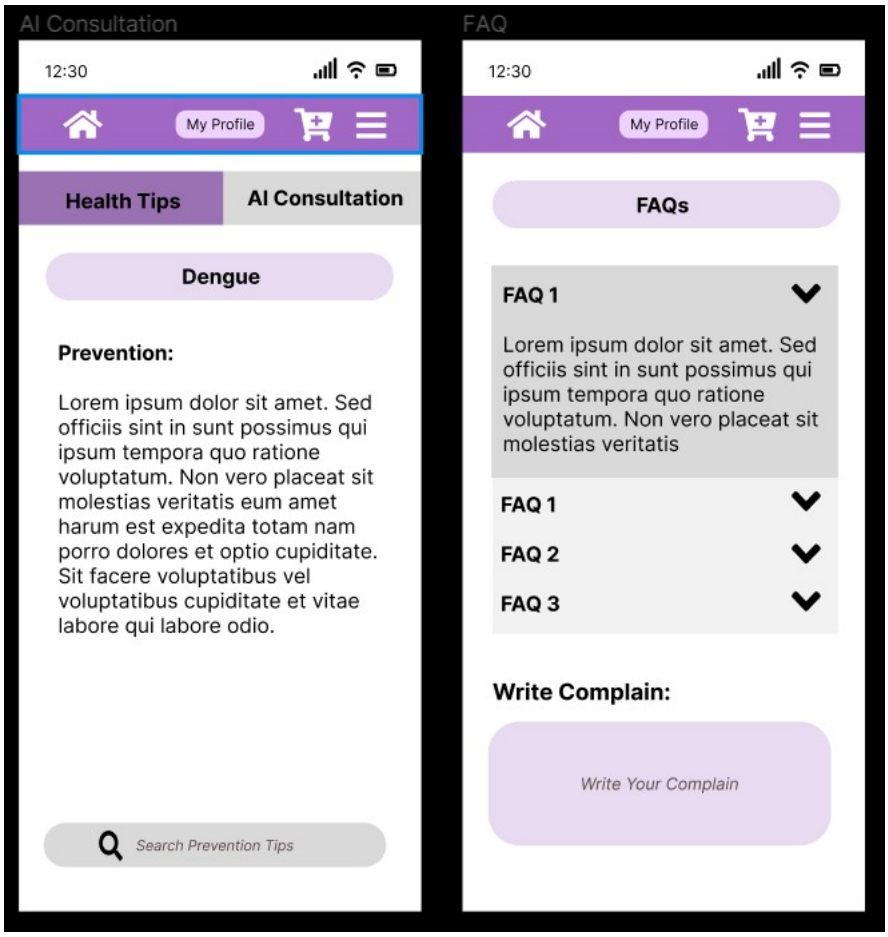
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