American International University-Bangladesh (AIUB)

Department of Computer Science

Faculty of Science &Technology (FST)

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BanglaMeds Project Requirement Management

Software Requirement Engineering

Sec: **A**

Project submitted

By

Tanjib Rubyat Bristy (20-44042-2)
Ashiqul Islam (20-44043-2)
Nafisa Hossain (20-44090-2)

Checked By Industry Personnel

Name: Tanzil Tafheem

Designation: Senior Business Analyst

Company: Brain Station 23 PLC.

Sign:

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1. PROBLEM DOMAIN

1.1 Background to the Problem

In Bangladesh, there are many online pharmacies like BanglaMeds.com. However, there don't seem to be enough websites where you may get in touch with the doctors online and make a series of purchases from that store. The program might include features like informing the doctors in case of an emergency. If a person at a specific place wants to look for medication, they will see many pharmacies nearby, and it will also display the medications that are currently on hand in the store.

1.2 Solution to the Problem

To address the shortage of online platforms connecting doctors and pharmacies in Bangladesh, we propose creating an all-inclusive online healthcare and pharmacy service. This platform would offer virtual doctor consultations and a user-friendly way to locate nearby pharmacies and available medications.

Users can easily connect with qualified doctors through video or chat for medical advice and prescriptions. In emergencies, a quick-access button can connect users to on-call doctors who can provide immediate assistance.

The platform will also integrate with local pharmacies, showing real-time medication availability and allowing users to place orders for home delivery. By using location-based technology, users can find nearby pharmacies and check which medications are in stock.

To ensure user privacy and data security, stringent measures will be implemented. The platform will be easy to use and provide 24/7 customer support, while marketing efforts will create awareness about its benefits.

This comprehensive solution not only simplifies healthcare access but also contributes to timely medical assistance and cost savings for people all over Bangladesh.

2. SOLUTION DESCRIPTION

2.1 System Features

Doctor:
• Approve Patients appointment
• Display reports
• Delete patients report
• Give prescriptions

Patient:
• Search Doctors
• Search Medicines
• Search Reports
• Search hospitals

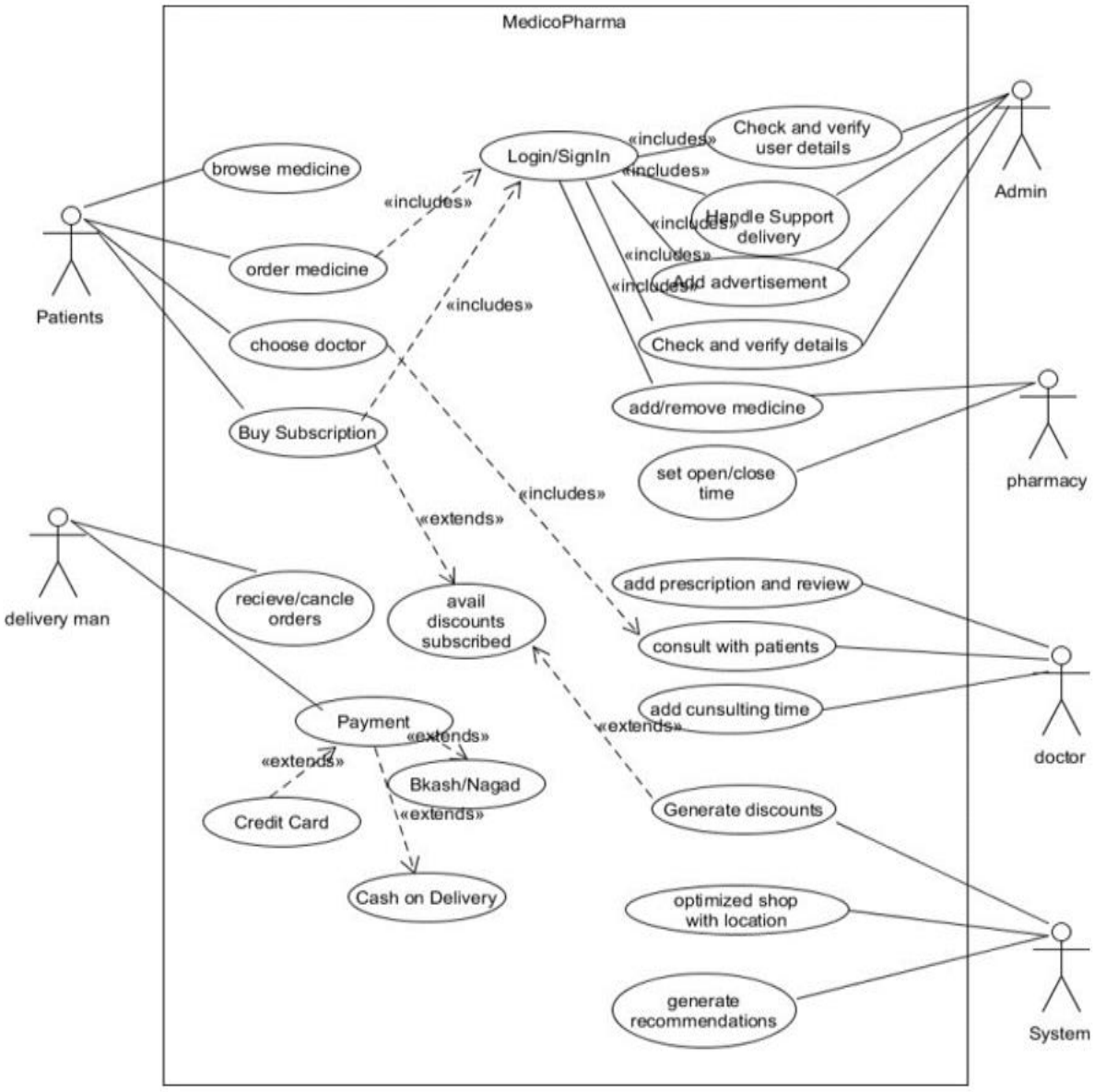
Pharmacy Manager:
• Take orders for medicines
• Customize products

Delivery Man:
• Receive orders
• Cancel orders
• Receive payments

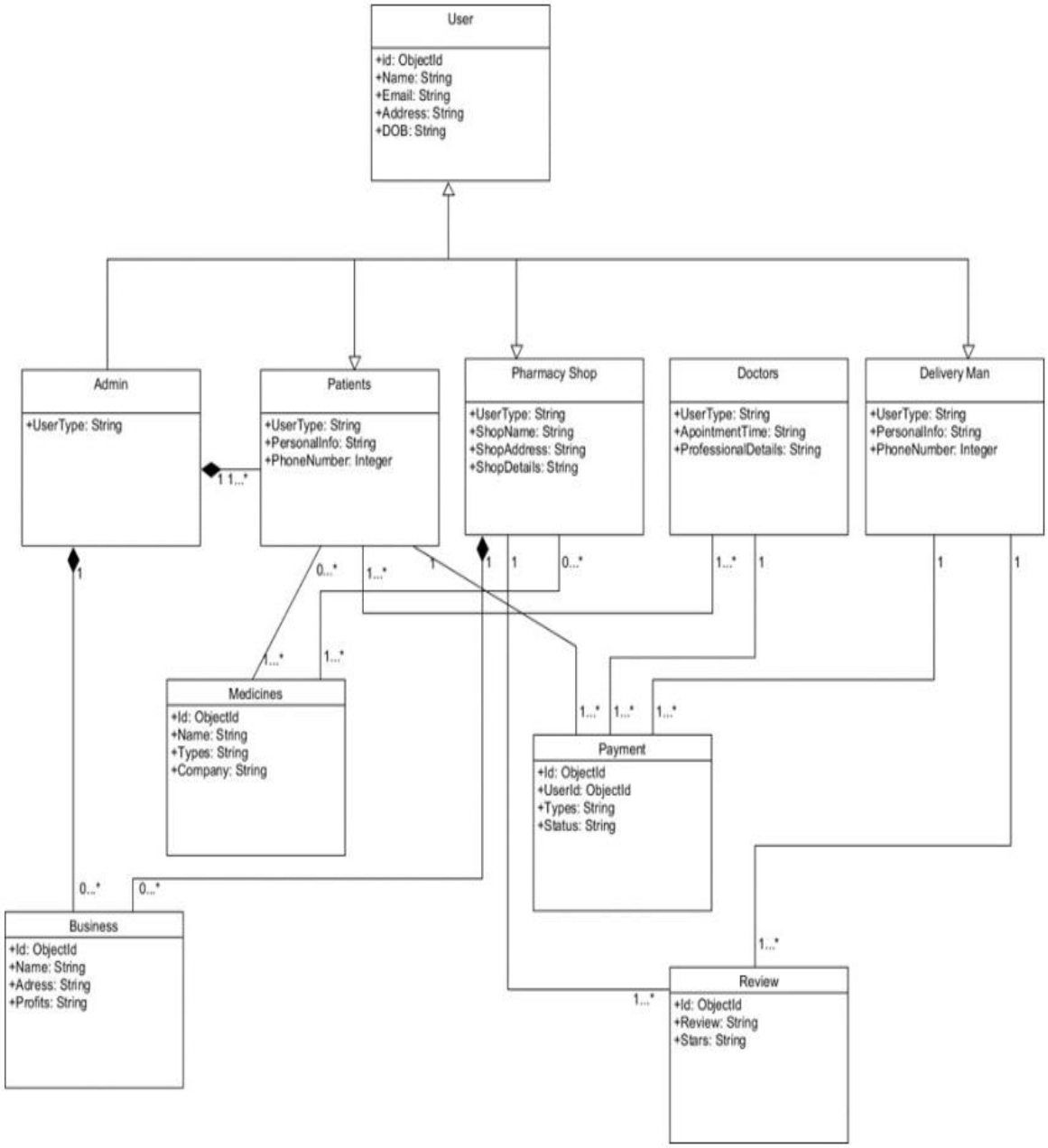
• Deliver orders

2.2 UML Diagrams (Any 3 types)

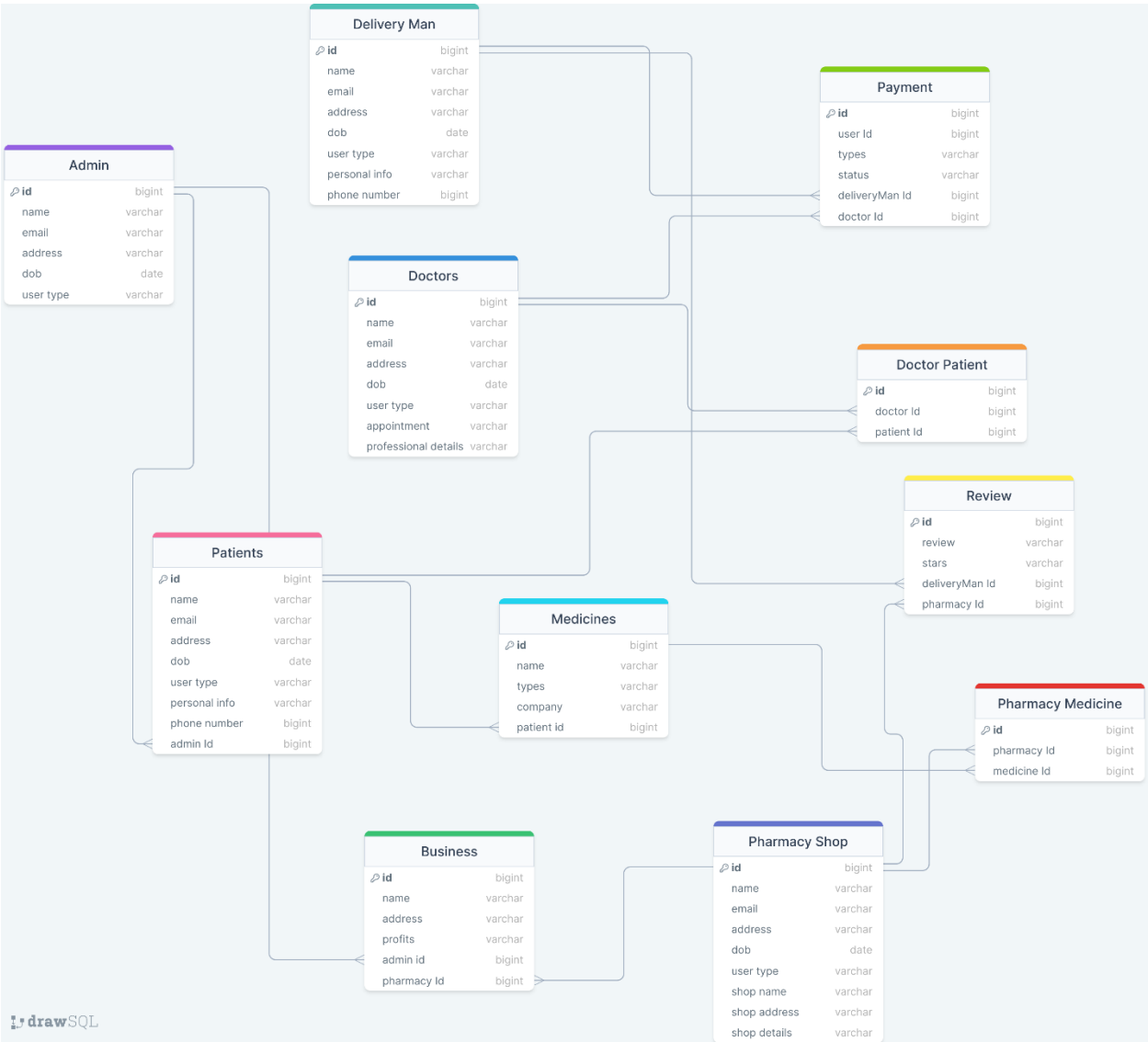
Use case diagram:



Class Diagram:



ER diagram:



3. Social Impact

- **Enhanced Healthcare Access:** Online doctor consultations bridge gaps, especially in underserved areas, and emergency notifications ensure prompt medical assistance.

- **Convenience and Savings:** Ordering medications from nearby pharmacies saves time and reduces costs, making quality healthcare affordable.

- **Preventing Shortages:** Real-time medication availability information prevents out-of-stock situations, improving patient experiences.

- **Health Education:** The platform disseminates health resources, empowering users with knowledge for informed decisions.

- **Economic Growth:** Job opportunities are created in software, customer support, and pharmacy management sectors, boosting the local economy.

- **Health Insights:** Aggregated data aids in analyzing health trends, enabling effective resource allocation for public health authorities.

- **Environmental Impact:** Reduced physical visits contribute to lower emissions and less traffic congestion.

4. Development Plan with Project Schedule

1. Planning and Requirement Analysis

- Define the project's purpose, goals, stakeholders, and initial timeline.
- Assess the technical, financial, and operational feasibility of the online pharmacy.
- Engage with stakeholders (pharmacists, customers, regulatory bodies) to gather detailed functional and non-functional requirements.
- Clearly define what features and functionalities the online pharmacy will have.
- Identify potential risks and devise strategies to mitigate them.
- Estimate the required team members, skills, and technologies for the project.
- Create a high-level timeline, breaking down the project into stages and milestones.

2. Defining Requirements

- Clearly document all functional and non-functional requirements in a detailed requirement specification document.
- Review the documented requirements with stakeholders to ensure accuracy and alignment with their needs.
- Validate the requirements to ensure they meet the pharmacy's objectives and comply with relevant regulations.
- Prioritize requirements based on their importance and impact on the pharmacy's operations.

3. System Design:

- Develop the system architecture, including databases, APIs, and front-end frameworks.
- Design the user interface (UI) and user experience (UX) of the online pharmacy platform.
- Create data models for medication information, user profiles, orders, prescriptions, etc.
- Plan security measures, including encryption, user authentication, and data privacy compliance (HIPAA, GDPR, etc.).

4. Development:

- Implement the front-end and back-end components of the platform.
- Develop the medication catalog, search functionality, and product pages.
- Create user registration and login systems.
- Implement prescription upload and verification processes.
- Integrate a secure payment gateway for online transactions.
- Build an order management system for processing and tracking orders.
- Implement features like order history, notifications, and customer support.

5. Testing:

- Conduct unit testing, integration testing, and user acceptance testing (UAT).
- Test the platform's functionality, security, performance, and compatibility.
- Identify and fix bugs and issues.
- Perform penetration testing and security audits to ensure data protection.

6. Deployment:

- Deploy the online pharmacy platform to a staging environment for final testing.
- Address any remaining issues and ensure all requirements are met.
- Plan the production deployment, including server setup, domain configuration, and data migration.
- Monitor the system during the deployment to ensure a smooth transition.

7. Maintenance and Continuous Improvement:

- Provide ongoing maintenance and support for the platform.
- Regularly update medication information and ensure compliance with regulatory changes.
- Gather user feedback and make continuous improvements to the platform's features and user experience.

Schedule:

Month / Task	1	2	3	4	5	6	7	8	9	10	11	12
Planning and requirement analysis												
Defining Requirements												
System Design												
Development												
Testing												
Deployment												
Maintenance and Continuous Improvement												

5. Marketing Plan

- **Unique Value Proposition (UVP):** Clearly define your platform's unique value proposition. Highlight the convenience of online doctor consultations, real-time medication availability, and the ability to locate nearby pharmacies. Emphasize how your platform addresses the lack of online doctor interaction and ease of medication procurement.

- **Target Audience Segmentation**: Identify and segment your target audience into distinct groups such as patients seeking online consultations, caregivers, and doctors looking for a reliable platform. Tailor your marketing messages and strategies to each segment's specific needs and pain points.

- **Location-Based Awareness:** Showcase the location-based feature prominently in your marketing efforts. Illustrate how users can easily find pharmacies nearby and check medication availability, making it convenient for them to access essential medicines.

- **Doctor Engagement and Trust:** Highlight the feature that allows users to inform doctors in case of emergencies. Build trust by featuring profiles and credentials of qualified doctors available for online consultations. Share success stories of patients who received prompt medical assistance through your platform.

- **Partnerships with Local Pharmacies:** Collaborate with local pharmacies to integrate their inventory and real-time availability data into your platform. This partnership can be a strong selling point, showcasing your platform's ability to provide up-to-date information on medication availability.

- **User Testimonials and Reviews:** Collect and prominently display user testimonials and reviews that emphasize the positive impact of your platform. Genuine experiences from satisfied users can greatly influence potential users' decisions to trust and use your services.

- **Educational Content:** Develop educational content, such as blog posts and videos, that explain the benefits of online doctor consultations and the convenience of your platform. Address common health concerns and showcase how your platform helps users access medical advice and medications efficiently.

6. Cost and Profit Analysis

6.1 Required People

Our software project type: Organic
That means P=1.05 , T=0.38
Coefficient<Effort Factor> = 2.4

We know,
Effort = PM
Here,
SLOC = 17000 Lines
PM = Coefficient<Effort Factor> * (SLOC / 1000) P = 2.4 * (17000/1000)^1.05 = 47.00
Development time, DM = 2.50 * (PM) ^T
= 2.50 * (47) ^0.38 = 11months
Required number of people, ST = PM/DM
= 47/12 = 4 people

6.2 Budget:

Developer/Tester salary of 11 months:
Per employee salary per month = 40000 Taka = 400 Taka per hour
Total salary = 400 * 1760 = 7, 04, 000 Taka
Requirement analysis:
Required time = 1 month = 25 working days = 200 working hour
Requirement analysis person's per hour salary = 250 Taka
Total requirement analysis salary = 250 * 200 = 50,000 Taka
Transportation cost: 15,000 Taka (Approximate)
Hardware expense: 1, 20, 000 Taka (Approximate)

Rent expenses:
Total in 11 months = 1, 65, 000 Taka [Per month = 15,000 Taka]
Total utilities in 11 months: 15,000 Taka (Approximate)
Maintenance (Till 4 months after delivery):
Cost per hour = 1,200 Taka
Total estimated time needed for maintenance = 40 hours
Total estimated maintenance cost = 1,200 * 40 = 48,000 Taka
Project manager's salary of 11 months:
Per month salary = 40,000 Taka
Total salary = 40,000 * 11 = 4, 40, 000 Taka
Accountant's salary of 11 months:
Per month salary = 12,000 Taka
Total salary = 12, 000 * 11 = 1, 32, 000 Taka
Total expense: 7, 04, 000 + 50,000 + 15,000 + 1, 20, 000 + 1, 65, 000 + 15,000 + 48,000 + 4, 40, 000 + 1, 32, 000 = 1, 689, 000 Taka
Profit: 25% of total expense = 1, 689, 000 * 25% = 4, 22,250 Taka
Total budget: 1,689, 000 + 4, 22,250 = 2, 411, 250 Taka

7. Reference

- *C. Wong, "A Successful Software Development," in IEEE Transactions on Software Engineering, vol. SE-10, no. 6, pp. 714-727, Nov. 1984*
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- *BanglaMeds: Project accessible: https://www.banglameds.com.bd/*