MILITARY INSTITUTE OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE CODE: CSE-364

COURSE NAME: SOFTWARE DEVELOPMENT PROJECT - I

PROJECT TITLE: A FRIENDLY GUIDE TO MEDICINE SHOPPING

Group 01

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Engineering Knowledge

- **Secure User Authentication:**
  Implemented robust user registration and sign-in mechanisms, prioritizing data security for user authentication.

- **Dynamic and Responsive UI Development:**
  Created dynamic and responsive user interfaces using React JS, blending HTML, CSS, and JavaScript to ensure an intuitive and seamless user experience.

- **Server-Side Logic with Express.js and Node.js:**
  Developed efficient server-side logic with Express.js and Node.js, managing user requests and interacting seamlessly with the MongoDB database.

- **MongoDB for Database Operations:**
  Chose and managed MongoDB for streamlined database operations, including the implementation of CRUD operations for dynamic data manipulation.

- **Git for Version Control:**
  Implemented version control using Git, employing effective branching and merging strategies for seamless collaboration among team members.

- **Integration of Third-Party Services/APIs:**
  Integrated third-party services and APIs to augment platform functionality, enriching the user experience with additional features.

- **User-Friendly Interface Design:**
  Designed intuitive and user-friendly interfaces, incorporating advanced features like sorting options and personalized dashboards for an enhanced user experience.

- **Secure Coding Practices and Scalable Architecture:**
  Applied secure coding practices to safeguard user data while designing a scalable architecture in both frontend and backend, ensuring optimal performance and accommodating future growth.

Design and Development of the Solution

Attributes	Complex Engineering Problems
1.Depth of Knowledge Required(P1)	• Proficiency in web development (React JS, HTML, Tailwind CSS). • Mastery of server-side logic (Node.js, Express.js) for efficient operations. • In-depth understanding of MongoDB for dynamic data storage and retrieval. • Familiarity with security practices and secure coding for user data protection. • Version control expertise using Git for collaborative development.
2.Range of Conflicting Requirements(P2)	• Balancing user needs for customers and pharmacies. • Managing conflicts, such as user preferences and platform security.
3. Depth of Analysis Required(P3)	• Analyzing user interactions for streamlined processes. • Conducting security analyses to identify and mitigate potential vulnerabilities.
4. Familiarity of Issues(P4)	• Awareness of industry challenges, including transparency in the medicine market. • Addressing user trust and the need for informed healthcare decisions.
5. Extent of Applicable Codes(P5)	• Implementing both frontend and backend code for seamless functionality. • Adhering to coding standards for maintainability and scalability.
6.Extent of Stakeholder Involvement and Conflicting Requirements(P6)	• Involving stakeholders (customers, pharmacies, administrators). • Balancing conflicting requirements, such as user preferences and pharmacy inventory management.

7. Interdependence(P7)	• Interdependence between frontend and backend components. • Dependencies on external services, such as third-party APIs for enriched functionality.

Attributes	Complex Activities
1. Range of Resources	• Diverse human resources for frontend (UI development), backend (server-side logic), and database development. • Integration potential with external services or APIs for expanded features.
2. Level of Interaction	• High interaction among UI components, server-side logic, users, and pharmacies. • Coordination for a seamless user experience, efficient data flow, and inventory management.
3. Innovation	• Innovative platform redefining medicine shopping experiences. • Features like sorting options, personalized dashboards, and real-time medicine availability contribute to innovation.
4. Consequences for Society and the Environment:	• Reshaping perceptions of transparency in the medicine market and empowering users. • Consideration for societal impacts, encouraging informed healthcare decisions.
5. Familiarity	• Addressing industry challenges (transparency, user trust). • Leveraging coding standards and best practices in web development.

Contribution to public health, cultural, societal, environmental considerations:

Public Health Contribution:

Informed Healthcare Decisions:

Pharma Buddy aims to contribute to public health by providing a platform that enables users to make informed decisions about their healthcare purchases. Users can access transparent information about medicine availability, prices, and pharmacy reviews, reducing the risk of health-related issues due to misinformed choices.

Cultural and Societal Impact:

Enhancing Transparency and Trust:

The platform fosters transparency in the medicine market, empowering users with information to make healthcare decisions confidently. This contributes to a healthier society by establishing a trustworthy environment for medicine shopping.

Community Engagement:

Pharma Buddy promotes community engagement by connecting pharmacies and customers. Users can provide feedback, creating a sense of community and shared experiences. This social interaction strengthens connections within the healthcare community, fostering a sense of trust and belonging.

Environmental Considerations:

Encouraging Responsible Medicine Practices:

Pharma Buddy can influence environmental considerations by encouraging responsible medicine practices. The platform may highlight pharmacies adopting sustainable practices, promote eco-friendly packaging, and support environmentally conscious approaches within the pharmaceutical industry. This aligns with the growing interest in sustainable and responsible healthcare practices.

This section emphasizes Pharma Buddy's potential contributions to public health, cultural exchange, societal impact, and environmental considerations, aligning the project with broader goals of fostering a healthier and more sustainable community.

Modern Tool Usage

No.	Category	Tool	Purpose
1	Version Control	Git	Efficient collaborative version control and code management
2	Frontend Development	React JS, HTML, Tailwind CSS	Crafting dynamic and responsive user interfaces for seamless user experience
3	Backend Development	Node.js, Express.js	Architecting a scalable server-side application to power the platform
4	Database Management	MongoDB	Dynamic data support, reliability, and flexibility for efficient data operations
5	Deployment	Vercel (Frontend), MongoDB Atlas (Database)	Hosting the frontend and managing the database with enhanced reliability
6	Project Management	GitHub Projects, Trello	Efficient tracking of tasks, issues, and project progress for streamlined development
7	Testing	Jest, Supertest	Ensuring robust code quality and functionality through comprehensive testing
8	CI/CD	GitHub Actions, Docker	Automating testing and deployment processes for efficient and continuous development

Individual Team Work:

Versions → **Members** ↓	**Version 1 Features**	**Version 2 Features**	**Version 3 Features**
Maisha Tabassum	View Medicine List (Customer) Pharmacy Dashboard (Add Meds)	Admin Dashboard (Feedback List) User can View existing Pharmacies	User View Medicines Under Pharmacies Sort by Price (Medicines)
Afra Anan	Add Medicine to Cart (Customer) Admin Dashboard (Medicine List)	Admin Dashboard (User List) User Feedback	Check Medicine Availability

Ahmad Abdullah	User Login (Customer)	User Login (Pharmacy)	Customer Purchase History Sort By Distances
Md Zakaria Hossain Emon	User Registration (Customer)	User Registration (Pharmacy)	Pharmacy Dashboard (Delete Meds) User Dashboard