UNIVERSITY OF PLYMOUTH

COMPUTING GROUP PROJECT

PUSL 2021

PROJECT PROPOSAL

GROUP A 16

Medi Findy

Table of Contents

Overview

In the modern world, many new technologies, like education, health, government, military, etc., are used everywhere. When smartphones came, people's daily tasks changed. It helps to do tasks efficiently. So, we can develop what people need in today's activities. In this project, we are focusing on health care. Already, the world is using artificial intelligence, machine learning, and blockchain technology to improve patient outcomes.

In Sri Lanka, we use only a few more technologies in healthcare. For example, government hospitals use paperwork for patients' and clinic details and do not provide a database. Sometimes, people need help finding their emergency medicines on time. Some people ask for help from others to find medicine using social media. This is a massive problem because sometimes that medicine is an emergency. If we can't find the medicine on time, it causes someone's life or is too dangerous to patients. If we can create a network of all the pharmacies in the country into one system, we can check their available medicines with brand. Users can find their medicine immediately. If their medicine is unavailable, we create a special request section to notify all the pharmacies. If they find the medicine, they can contact the user. Then, users can find the medicine quickly. This helps to link all the pharmacies and communities together. We show the user the location of the pharmacies. There is no delivery system because a delivery man delivers many medicines to many users at once. That is a risk if the medicine is changed suddenly. That is why we have yet to add that feature. Currently, only the location of the pharmacy is shown.

This proposal will outline this application's key features and functionalities. Our first goal is to create a time when healthcare access is always available. We wish to develop user-friendly interfaces for users. This is a small step of our project, and we want to update the application step by step.

We named this app ***Medi Findy***. ***Medi Findy***, our forthcoming mobile application, is poised to be the ultimate solution for users seeking a seamless and efficient way to discover medicines and connect with pharmacies.

Objectives

This system fulfills the needs of people who cannot find essential medicines for their diseases. Because of that, this gives them high satisfaction, as they can save valuable time without any hassle. Also, this allows pharmacies to increase their sales and revenue because of the network of relationships spread across the country through the system. As well as they can increase the customer base. They can also promote their business name due to the appreciation given to them by the service recipient through the system. Ultimately, this entire system has given more importance to people's health care.

- To find pharmacies that have any medicine type and any brand.
- To check their inventory and show who has the required medicines, for that network all the pharmacies in the country to one system.
- To show all the available medicines in all brands in pharmacies when someone searches.
- To send notifications to all pharmacies regarding any medicine if someone requests, creating a special request section.
- To add user reviews and ratings for pharmacies.
- To find essential medicines easily, structure the database tables to store medicines information based on generic and brand names.

Target Users

Our Target users here are pharmacies, local users, and tourists. Among these, we prioritize local users because some patients may need help finding the medicine in certain pharmacies, making it easier to locate the required medication.

Pharmacy

- Pharmacies can offer their medicines to customers promptly.
- The pharmacy can identify a customer's request through a notification unit.
- After receiving a notification, it is possible to contact the customer.

Local Users / Consumers

- They can find medicine that might be unavailable elsewhere.
- Users can locate where they can find the medicine they need all over the country or nearby.
- When searching for a needed medicine, they receive notifications from pharmacies indicating its availability.

Doctor

- In cases where the medicine required by patients is unavailable in the hospital, the doctor can inform the patients about the pharmacies where the medication can be obtained.

Travelers and Tourists

- Travelers and Tourists can learn about the types of medicine they might need in an emergency or find out where they can obtain regular medication if they do not have it.

Application Features and Description

The following are the essential application features of the proposed ***Medi Findy*** App.

01. **User Registration and Profile Management:**

    Users can use social media or email accounts to register. The app's user profiles retain personal details and preferences, delivering a customized experience.

02. **Medicine Search and Discovery Functionality:**

    Users can search for medications based on their name, brand, or active ingredient. Additionally, comprehensive treatment details are readily available. This feature includes filtering and sorting options for added convenience.

03. **Pharmacy List:**

    The app displays a list of pharmacies within a designated region, providing essential information such as pharmacy names, addresses, contact details, and operating hours. Users can conveniently locate nearby pharmacies by integrating geolocation and mapping services.

04. **Special Request Notification Section:**

    In certain instances, a medicine the user needs might not be in the database. In such situations, users can submit special requests to pharmacies. The app promptly alerts the pharmacies about these requests, establishing a channel for effective communication between users and pharmacies.

05. **Pharmacy Inventory Management:**

    This feature allows pharmacies to access and maintain their inventory. Pharmacies can make real-time adjustments by adding, removing, or editing medicines, while users can stay informed about immediate updates regarding medicine availability.

06. **Notifications and Alerts:**

Users stay well-informed thanks to notifications and alerts. The app informs users of newly added medicines by sending push notifications. Furthermore, users are kept up to date with significant updates and announcements related to the pharmacies and drugs. The app alerts users when the pharmacies respond to their special requests.

07. User Reviews and Ratings for Pharmacies:

Users can review and rate pharmacies and medicines. Also, users can comment on service quality and medicine availability in pharmacies. Users can see others' reviews. It also makes it easier for users to make decisions. The positive reviews the pharmacies receive enable them to boost their reputation and attract more customers.

08. Data Synchronization:

The app upholds data consistency and reliability through ongoing real-time synchronization with pharmacy databases and scheduled updates at regular intervals.

09. User Feedback and Customer Care:

Incorporating feedback forms allows users to express their concerns and contribute suggestions. Accessible customer support and contact information are crucial in elevating user satisfaction and promptly addressing their inquiries and problems.

10. Administrative Panel:

An administrative panel empowers administrators to manage user accounts, pharmacies, and app content efficiently. With tools designed for data moderation and content management, this feature streamlines the oversight and maintenance of the app.

11. Search Recommendations and Spelling Correction:

The ***Medi Findy*** app enhances the user experience by providing automatic search suggestions as users type into the search bar. Furthermore, it offers built-

in auto-correction for misspelled medicine names, effectively reducing user frustration and ensuring more accurate search results.

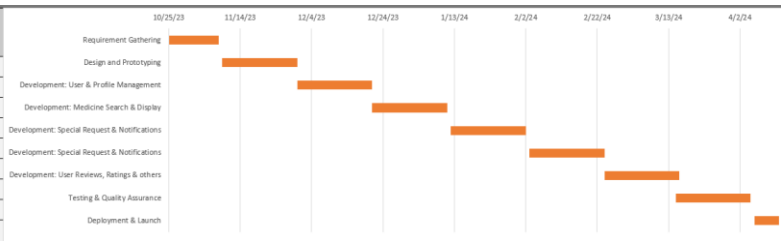
Time Frame

In this Gantt Chart, we divided our project into nine main tasks, which are as follows: Requirement Gathering, Design and Prototyping, User and profile Management, Medicine Search and display, Special Requests and notifications, Special Request Notifications, User Reviews, Ratings and others, Testing and Quality Assurance, and last, Deployment and launch.

We planned to complete the whole process within six months of the period. We planned to take 105 days from the entire period for the complete development process. Not only that, but we have also allocated 21 days for Testing and Quality Assurance to ensure the quality of this system.

Gantt Chart Full View

Pharmacy Inventory Search System					
START DATE	END DATE	Task No.	Task Name	Predecessor	DURATION (days)
10/25/23	11/9/23	1	Requirement Gathering	-	14
11/9/23	11/30/23	2	Design and Prototyping	1	21
11/30/23	12/21/23	3	Development: User & Profile Management	2	21
12/21/23	1/12/24	4	Development: Medicine Search & Display	3	21
1/12/24	2/3/24	5	Development: Special Request & Notifications	4	21
2/3/24	2/24/24	6	Development: Special Request & Notifications	5	21
2/24/24	3/15/24	7	Development: User Reviews, Ratings & others	6	21
3/15/24	4/6/24	8	Testing & Quality Assurance	7	21
4/6/24	4/13/24	9	Deployment & Launch	8	7

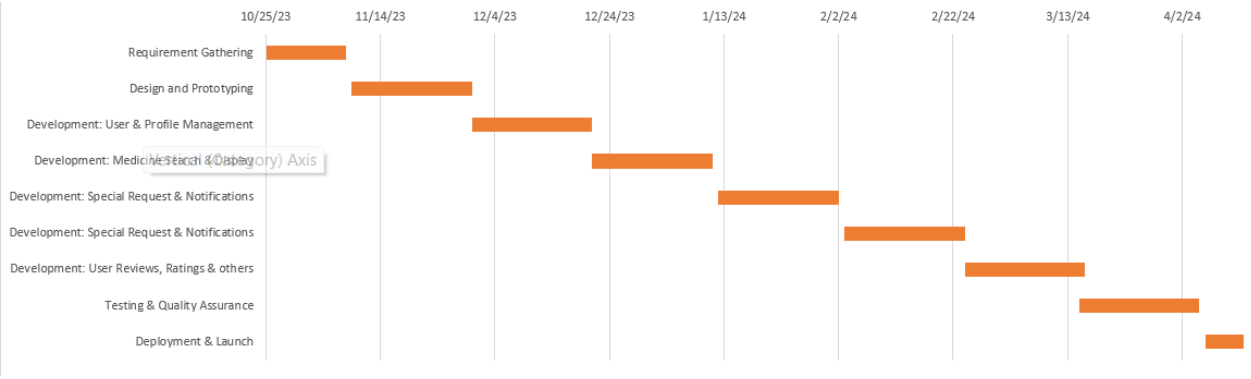


We have used a Gantt chart to depict the project's timeline in this context. Due to the chart's extensive nature, it has been divided into distinct sections, as outlined below:

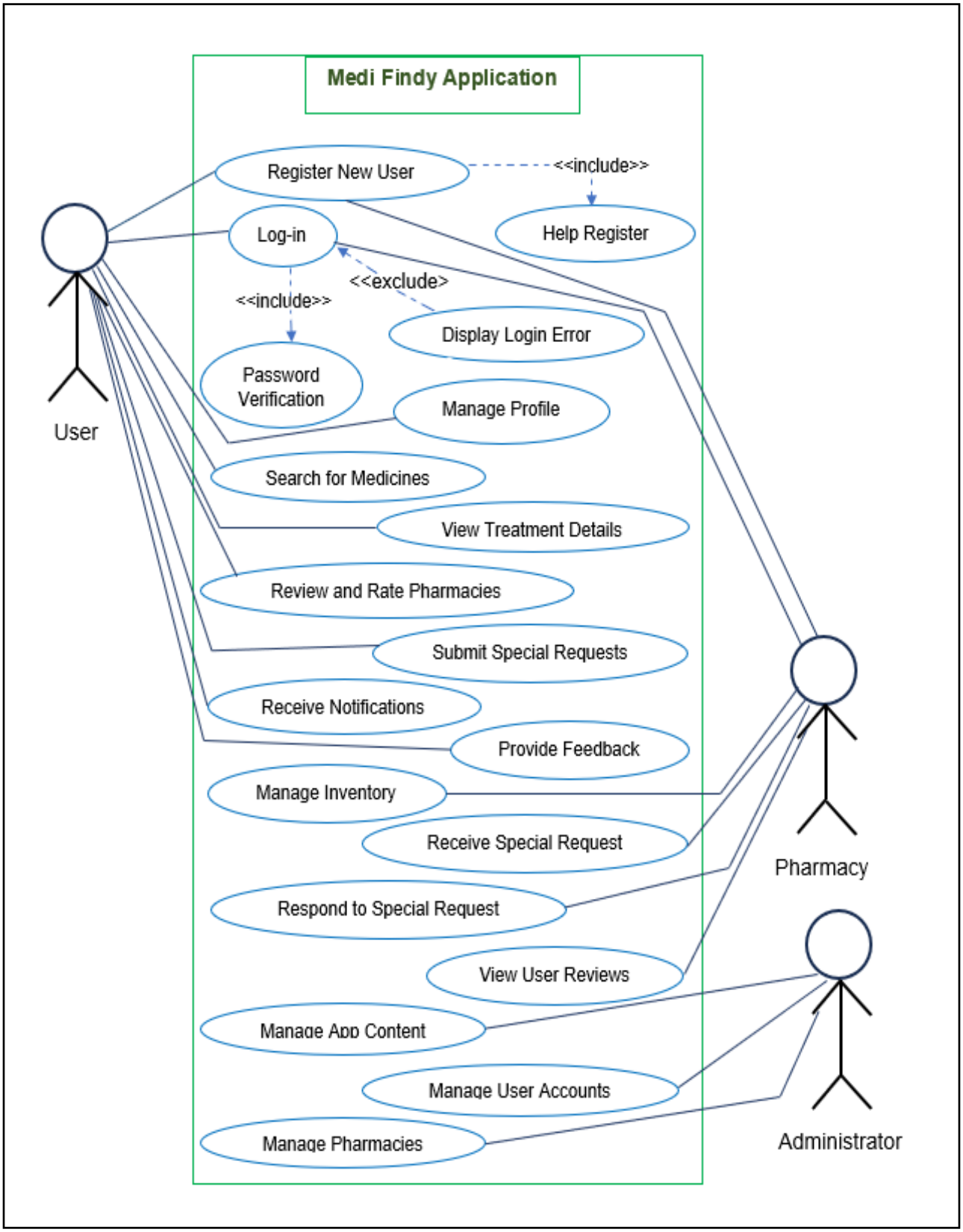
Gantt Chart Table: Fig_01

Pharmacy Inventory Search System				Predecessor	DURATION (days)
START DATE	END DATE	Task No.	Task Name		
10/25/23	11/9/23	1	Requirement Gathering	-	14
11/9/23	11/30/23	2	Design and Prototyping	1	21
11/30/23	12/21/23	3	Development: User & Profile Management	2	21
12/21/23	1/12/24	4	Development: Medicine Search & Display	3	21
1/12/24	2/3/24	5	Development: Special Request & Notifications	4	21
2/3/24	2/24/24	6	Development: Special Request & Notifications	5	21
2/24/24	3/15/24	7	Development: User Reviews, Ratings & others	6	21
3/15/24	4/6/24	8	Testing & Quality Assurance	7	21
4/6/24	4/13/24	9	Deployment & Launch	8	7

Gantt Chart: Fig_02



Use Case Diagram



Challenges and Limitations

Developing an application may face various challenges and limitations. All the points related to this system should be taken into consideration. That is, they should focus on ensuring their safety and limited resources. Acknowledging the following challenges and limitations and finding practical answers is essential in creating a successful mission that meets users' expectations by focusing on issues such as time, resources, and technology.

- **Data Accuracy:**

  Careful attention should be paid to data accuracy. The reason is that pharmacies may only sometimes update their inventory. Thus, outdated data may remain in the system.

- **Pharmacy Collaboration:**

  Encouraging all pharmacies to come together and update their inventory regularly can be challenging. Because of that, some pharmacies may hesitate to provide their data, and some pharmacies may need the relevant technology.

- **Standardization of Data:**

  The names and brands of drugs in the system may change over time, which can cause problems in standardizing this data and make it challenging to find accurate data.

- **Data security:**

  Careful attention should be paid to the privacy of information of users of the system and pharmacies, and strict security rules must be followed in handling that data.

- **Legality:**

  The data behavior in the system, as well as the legal status of the pharmacy, such as licensing, must comply with the government's drug regulatory and legal policies.

- **Usage and quantity:**

  If this system expands with time, the number of users and pharmacies using the system will grow, and thus, some problems will be faced in data handling.

- **Orientation of users to the system:**

Getting users to use the system consistently can be problematic. As a solution, marketing promotion strategies may be used.

Technical Specifications

We planned to develop this ***Medi Findy*** app using Flutter for iOS and Android. Both have significant market shares in the smartphone arena. We should cater to both user bases to benefit from this system. We selected Flutter to build this app powered by the Dart Language. Flutter is a UI toolkit that allows it to serve both iOS and Android platforms using a single codebase. We don't need to maintain two separate codebases as a benefit of using Flutter. It will help us to make a cost-effective and efficient system. Using the Flutter UI kit, we can use a set of fully customizable widgets to create complex UIs.

We planned to use Firebase Hosting as the cloud platform to host our back-end services. Firebase is built on the Google Cloud Platform. It is one of the most scalable cloud platforms available, which can handle many users and data without problems. It offers several features to protect our app and data, such as encryption, access control, and security monitoring. As the programming language in the back end, we wish to use Python Language because it is a fast and scalable language that can be used to develop high-performance back-end services. We planned to use MySQL as the database management system for our application. Firebase Cloud SQL is a fully managed MySQL database system we can use with our application.

We consider this application's performance, scalability, security, and usability. To improve the performance of this system, we planned to use scalable cloud platforms and well-structured databases. By using encryption and secure coding practices, we can improve the security of our system.

Conclusion

In conclusion, creating the "Medi Findy" app is a big step for medications. Our idea has an opportunity to improve countless people, given the growing need for quick and effective healthcare treatments.

We didn't create an industry by bringing together healthcare and technology. We make a bridge between patients and pharmacies." Medi Findy" users can identify their health, and they can maintain their health and wellness. This offers many potential advantages. Connecting to nearby pharmacies can improve medication participation and enhance the sense of community because it is user-friendly and available. People from all kinds of backgrounds can take advantage of using this app.

We continue with the creation of the "Medi Findy" application, and we warmly welcome partners, investors, and stakeholders to join us on this new adventure. Working together can improve healthcare accessibility and output for those using this app.

We think "Medi Findy" is more than just an app.; it's a monument to the strength of creativity and teamwork. We can make this vision a reality, benefiting people, pharmacies, and society. We created this app to move on to the modern world.

We appreciate your consideration of our proposal.

Workload Matrix

DLE Name	Plymouth Index Number	Role	Individual Contribution
Liyana Udeshika	10898686	Project & Group Leader, Programming Leader	Overview, Conclusion
Sabapathi Bandara	10898422	Planning Leader, Programming Leader	Time Frame, Technical Specifications
Bhagya Gunaratne	10898473	Testing & Maintenance Leader, Programming Leader	Application Features and Description, Use Case Diagram
Ruchika Perera	10898604	Technical Leader	Objectives, Use Case Diagram, Challenges and Limitations
Galhenage Perera	10898609	Quality Leader	Target Users

****