UNIVERSITY OF PLYMOUTH

PUSL 2021 – Computing Group Project

Project Proposal

Nearest Shop Locator Network System

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Project Overview

This project aims to develop a mobile app that provides the nearest location of opened shops for customers at anytime whether the item in available or not in required quantity and to check whether the items are in stock. The app will use GPS technology to locate the user and then display a list of nearby shops, along with their addresses, phone numbers, and hours of operation. Users will also be able to filter the list of shops by item type, price, and other criteria.

Introduction

In today's fast-paced world, people are always looking for ways to save time and effort. One way to do this is to use technology to make shopping easier. A mobile app that provides information about nearby shops and the availability of items in stock can be a valuable tool for consumers.

The proposed app will address a number of pain points for consumers. First, it will save them time by eliminating the need to search for shops online or in the phone book. Second, it will help them to avoid disappointment by allowing them to check whether the items they need are in stock before they make a trip to the shop.

Objectives of the project

1. To develop a mobile app that allows users to find the nearest open shops that sell the items they need.

    - This objective is to create a mobile app that is convenient and easy to use for consumers. The app should be able to locate the user's current location and display a list of nearby shops, along with their addresses, phone numbers, and hours of operation.

2. To develop a mobile app that allows users to check the availability of items in stock at nearby shops.

    - This objective is to create a mobile app that saves consumers time and frustration. The app should be able to access real-time inventory data from nearby shops and display whether or not the items that the user needs are in stock.

3. To develop a mobile app that is user-friendly and easy to navigate.

    - This objective is to create a mobile app that is accessible to a wide range of users, including those who are not tech-savvy. The app should have a simple and intuitive interface that is easy to understand and use.

4. To develop a mobile app that is secure and reliable.

    - This objective is to create a mobile app that protects user data and provides a consistent and reliable experience. The app should use industry-standard security measures to protect user data and should be regularly tested to ensure that it is working properly.

5. To develop a mobile app that allows users to rate and review shops.

    - This objective is to create a mobile app that helps users to make informed decisions about where to shop. The app should allow users to rate and review shops so that other users can see what other people have said about them.

6. To develop a mobile app that allows users to save their favorite shops and items.

    - This objective is to create a mobile app that is convenient for users who frequently shop at the same stores or who are interested in specific items. The app should allow users to save their favorite shops and items so that they can easily find them again in the future.

Target Users

This project aims to cater to a wide and diverse audience, with a primary focus on meeting the needs of both local residents and individuals who may not be familiar with the area they are in. The primary target audiences include:

1. Local Residents:
   This mobile app serves as a valuable tool for local residents looking to streamline their shopping experiences. Whether they are searching for specific products or simply exploring new nearby stores, this app enables them to easily find the nearest open shops, check product availability, and make well-informed decisions based on factors like pricing and other preferences.

2. Foreigners:
   Tourists, expatriates, and newcomers to a particular area often encounter challenges when trying to locate essential goods or their preferred products. This app becomes an indispensable resource for such individuals who may not be well-acquainted with the local retail landscape. It allows them to effortlessly discover nearby shops, access vital information like store addresses and contact details, and confirm product availability.

3. Travelers:
   Travelers, whether they are on business trips, leisure vacations, or educational visits, will find this app exceptionally useful. Travelers can swiftly identify nearby shops while in transit or during their stay in a new location, ensuring they can easily access the items they need without any inconvenience.

By catering to these specific target audiences, the mobile app aims to elevate the overall shopping experience, boost the visibility of local businesses, and provide valuable assistance to anyone in search of the nearest open shops, whether they are in a familiar neighborhood or an unfamiliar location.

Propose technologies and Tools.

. **Mobile App Development:**

1. **Development Framework:**
    - **React Native:** This allows you to build a cross-platform mobile app (iOS and Android) with a single codebase, reducing development time and effort.
2. **User Interface (UI) and User Experience (UX):**
    - **React Navigation:** For creating smooth navigation and routing within the app.
    - **Redux or MobX:** For state management, as it's important to handle and update the data efficiently.
3. **GPS and Location Services:**
    - **React Native Geolocation:** To access the user's device location.
    - **Google Maps API or Mapbox:** For displaying maps, geocoding, and reverse geocoding features.
4. **Backend Development:**
    - **Node.js:** For building the backend server to manage data and handle requests.
    - **Express.js:** A minimal and flexible Node.js web application framework.
5. **Database:**
    - **MongoDB:** A NoSQL database to store shop information, product availability, and stock data.
6. **Authentication:**
    - **Firebase Authentication:** For user authentication, as it's easy to integrate with React Native.
7. **Push Notifications:**
    - **Firebase Cloud Messaging (FCM):** To send real-time notifications to users regarding item availability and updates.

Development Tools:

8. **Integrated Development Environment (IDE):**
    - **Visual Studio Code (VSCode):** A popular and feature-rich code editor for JavaScript and React Native development.
9. **Version Control:**
    - **Git:** For tracking changes and collaborating on the codebase.
    - **GitHub or GitLab:** For hosting and sharing the code repository with your team.

Testing and Quality Assurance:

10. **Testing Frameworks:**
    - **Jest:** A popular JavaScript testing framework for unit and integration testing.
    - **Detox:** For end-to-end testing in React Native.
11. **Continuous Integration and Continuous Deployment (CI/CD):**
    - **Fastlane:** For automating the app deployment process and managing certificates and provisioning profiles.

Server Hosting and Deployment:

12. **Cloud Hosting:**
    - **AWS (Amazon Web Services), Azure, or Google Cloud:** For hosting your server and databases securely.

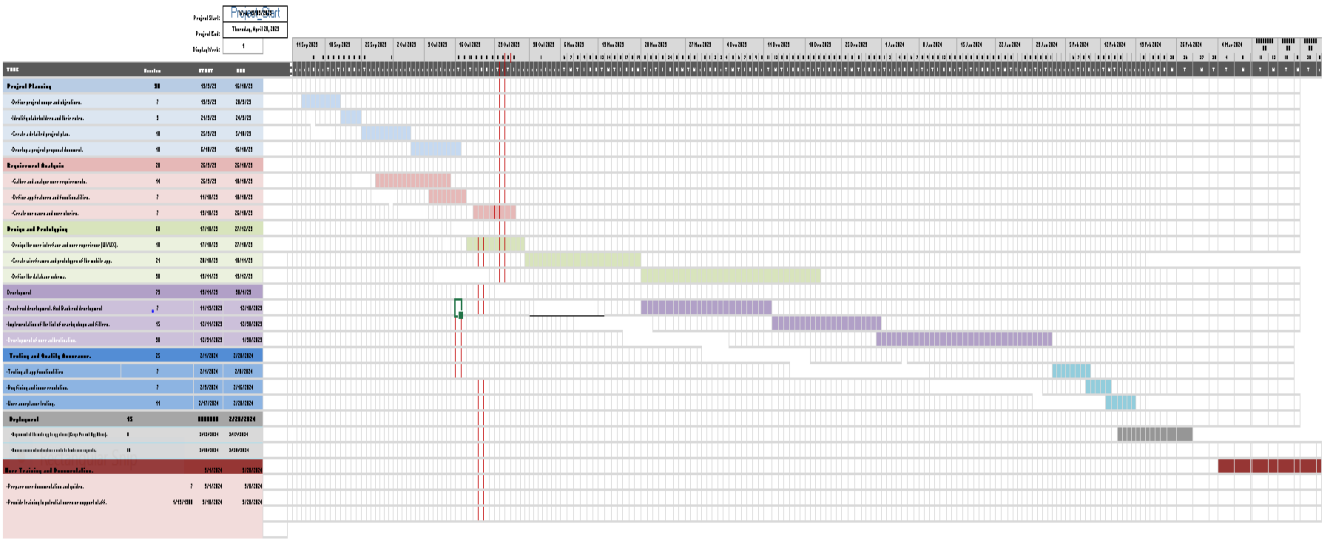
Analytics and Monitoring:

13. **Analytics Tools:**
    - **Google Analytics or Mixpanel:** To collect user data, track user interactions, and analyze app usage.

Documentation and Collaboration:

14. **Documentation Tools:**
    - **Swagger:** For documenting your API endpoints.
    - **Confluence or Google Docs:** For project documentation and team collaboration

Time plan(Gant Chart)



[gantt chart 62 new.xlsx]

Project Planning		**30**	13/9/23	16/10/23
-Define project scope and objectives.		7	13/9/23	20/9/23
-Identify stakeholders and their roles.		3	21/9/23	24/9/23
-Create a detailed project plan.		10	25/9/23	5/10/23
-Develop a project proposal document.		10	6/10/23	16/10/23
Requirement Analysis		28	26/9/23	26/10/23
-Gather and analyze user requirements.		14	26/9/23	10/10/23
-Define app features and functionalities.		7	11/10/23	18/10/23
-Create use cases and user stories.		7	19/10/23	26/10/23
Design and Prototyping		68	17/10/23	27/12/23
-Design the user interface and user experience (UI/UX).		10	17/10/23	27/10/23
-Create wireframes and prototypes of the mobile app.		21	28/10/23	18/11/23
-Define the database schema.		30	19/11/23	19/12/23
Development		73	19/11/23	30/1/23
-Front-end development. And Back end development		7	11/19/2023	12/10/2023
-Implementation of the list of nearby shops and filters.		15	12/11/2023	12/30/2023
-Development of user authentication.		30	12/31/2023	1/30/2023
Testing and Quality Assurance.		25	2/1/2024	2/28/2024
-Testing all app functinolities		7	2/1/2024	2/8/2024
-Bug fixing and issue resolution.		7	2/9/2024	2/16/2024
-User acceptance testing.		11	2/17/2024	2/28/2024
Deployment	**15**		**########**	**2/28/2024**
-Deployment of the mobile app to app stores (Google Play and App St	5		2/12/2024	2/17/2024
-Ensure server infrastructure is ready to handle user requests.	10		2/18/2024	2/28/2024
User Training and Documentation.			3/1/2024	3/28/2024
-Prepare user documentation and guides.		7	3/1/2024	3/8/2024
-Provide training to potential users or support staff.		1/13/1900	3/10/2024	3/28/2024

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