Table of Contents

I. Project Title and Authors…………………………………………………………..….Page 1

II. Preface………………………………………………………….………….Page 1

III. Introduction…………………………………………………………………..Page 1

IV. Glossary…………………………………………………….……………….. Page 2

V. User Requirements.…………………………………………………….…… Page 2

VI. System Requirements…………………………………………………..………. Page 4

VII. System Model……………………………………………………….……. Page 8

I. Project Title and Authors

Team Number: 11
Team Name: Grindhouse
Team members:

Mallika Jain 6559234094
Stacy Tran 5305330579
Sandeep Suresh 7720774451
Ethan Smith 5910317497
Shayanna Ahuja 6061783107

II. Preface

Bean&Leaf is an Android application that provides customers with an easy way to discover local coffee shops and tea houses and merchants a platform to market their establishments as well as track the success of their business. Users may browse the menus and prices of different shops, as well as get directions to go there. Bean&Leaf aims to provide a personalized experience by tracking customers' order histories, allowing them to see where they went and what they have purchased to make further tailored recommendations. To enhance the user's experience, merchants will be able to use Bean&Leaf to update their menu information, promote their stores, and collect user data.

III. Introduction

Coffee and team are staples in the diets of students across the country, especially at USC. However, finding nearby tea houses or coffee shops isn't as easy as you would expect, given how popular they are among students. Currently, if a student wanted to find tea house or coffee shop in their proximity, they would have to use general map apps such as Google Maps or Apple Maps. While these apps can be helpful, they often only show the most popular shops along with chain stores instead of all possible coffee shops and tea houses. A user can also use Yelp, Foursquare or UrbanSpoon but the app displays all restaurants in the area instead of specifically coffee shops and tea houses.

The Bean&Leaf application would solve this. Users can log into the app to find a map on their screen, displaying all the nearby cafes and tea house and what all can be ordered from store! Users will be able to tap on destinations to get directions, and can even track what they've ordered from each store during or after their coffee shop or tea house visit. Users will also be able to keep track of their caffeine intake, getting alerts each time they get close to the recommended caffeine limit. Bean&Leaf will also provide users with personalized recommendations based on their previous purchase history, giving users the opportunity to explore new shops! Furthermore, this application creates an opportunity for merchants to make additions to their online menus (drinks, prices, sizes, nutritional information), advertise new stores and track user history on an additional platform. This will forge a closer relationship between merchants and their customers to enhance the customer's overall experience.

IV. Glossary

Android Studio: The official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.

Application Programming Interface (API): A communication protocol between a client and a server intended to simplify the building of client-side software.

Backend: The part of a computer system or application that is not directly accessed by the user, typically responsible for storing and manipulating data.

Database: A collection of information that is organized so that it can be easily accessed, managed and updated.

Java: A high-level general-purpose programming language.

MySQL: A relational database management system developed used to create and store databases.

Structured Query Language (SQL): A domain-specific language used in programming and designed for managing data held in a relational database management system

User Interface (UI): The means by which the user and a computer system interact.

User Experience (UX): The experience of a person using a product such as a website or computer application.

V. User Requirements Specification

Customer/Merchant User Stories

1. **Title:** View location of nearby coffee shops and tea houses on a map.
   Description: View the locations of these shops on a map, showing the proximity relative to the user's current location. This map is the first thing that should be seen when the app is opened.
2. **Title:** Provide directions to a location when it is clicked on the map.
   Description: The directions to that specific establishments along with an ETA should appear when the user clicks on the option to get directions.

3. **Title**: The menu of each shop should be visible upon clicking the shop's location on the map.

Description: This menu should contain the beverages the shop has along with nutritional information and caffeine information.

4. **Title:** The user should be able to see and change their profile.

Description: This profile should include their username, email, gender and picture.

Customer Specific User Stories

5. **Title:** Record the user's item purchase history.

Description: When a user is guided to a specific shop or is determined to be in the location of a shop, they will be prompted to enter what drink they purchased at their specific location.

6. **Title:** Display the user's item purchase history.

Description: There should be a chart of all of the user's purchase history and trip information for each visit.

7. **Title:** Alert the user when their caffeine nears 400 mg/day.

Description: Monitor caffeine intake and alert when the user nears the limit. The first alert should occur when then user hits 300 mg/day and continue with every 50mg increment.

8. **Title:** View recommendations based on their purchase history.

Description: The user should be able to see various recommendations and should be able to search for a particular drink. The app should return all of the stores in the area that sell that particular drink.

Merchant Specific User Stories

9. **Title:** Merchants should have a different log-in interface than customers.

Description: In the separate interface for merchants, they should be allowed to claim a store as their own. The merchants should undergo a verification process when they want to claim a shop, including submitting pictures or a form to the administrator to approve it.

10. **Title:** The merchants should be able to view their customers' order history.

Description: They will be able to see all of the orders placed at their shop and when these orders took place.

11. **Title:** The merchants should be able to update their store's menus.

Description: The merchant can add or remove items from their menu. This includes flavors, sizes, prices, and nutritional value.

12. **Title:** The merchants can toggle between different stores in one profile.

Description: If the merchant has multiple shops, they can toggle between the shops to see different customer data about each store. Each store will be attached to one merchant profile so they don't have to log in and out each time they want to check on a different store.

VI. System Requirements Specification

Functional Requirements

User Story 1

1. User opens our android application on the home screen
    1.1. The user is not connected to the internet
    1.2. Application displays a black screen until connection established
2. Google Maps Application Program Interface (API) is rendered and displays the location of nearby coffee and shops in relation to the user location
3. Coffee and tea shop locational data from database is populated on the map.
4. User clicks on a tab other than the main map tab.

User Story 2

1. User clicks on a coffee or tea shop location on the home screen map.
2. User selects mode of transportation (walk, bike, or drive)
3. Directions are computed using Google Maps API
    3.1. The user is not connected to the internet
    3.2. Application displays an error that an internet connection could not be established.
4. Map is displayed with the route to the destination highlighted.
    4.1. User can tap a button to toggle between displaying step-by-step directions and the map
5. User is notified when they arrive at the destination.
6. User clicks on another tab to exit directions.

User Story 3

1. User clicks on a coffee or tea shop on displayed home screen map
2. User is routed to a menu display of chosen coffee or tea shop
3. Menu items and descriptions are populated from mySQL database from merchant account data
    3.1. Merchant account has no menu items so we display default menu items from a default menu items table in our mySQL database

4. The user can then navigate through potential menu items and click to add the item to their purchase history
5. Customer account purchase history data and caffeine intake is updated in the mySQL database
6. User exits coffee or tea shop menu

User Story 4

1. The user clicks on their profile
   1.1. The user chooses to change profile information.
   1.2. The user uploads a profile picture.
   1.2.1. The user chooses not to upload a profile picture
   1.3. The user chooses to change their gender.
   1.4. The user chooses to change their email.
2. The user leaves the profile tab.

User Story 5

1. User enters a coffee shop.
2. Bean & Leaf detects user's location in a coffee shop.
3. A pop-up prompts user to enter their purchase.
4. User enters their purchase.
   4.1. The user didn't have the app open while in the coffee shop, but the location feature still detects their presence in the shop, and a notification will occur telling the customer that they entered the store and that they should log their trip.
   4.1.1. If the user opens the notification, they are directed to a screen where they can log their trip.
   4.1.2. If the user doesn't open the notification, the next time they open the app, it will open to that screen encouraging them to log their trip.
   4.1.2.1. They log their trip.
   4.1.2.2. They decide not to and close the pop up by clicking the 'X' in the upper right corner of the pop up.
   4.1.2.2.1. The user can always go back to their previous trips in the history tab and log their trip (each store detection will be logged in the history tab)
5. User purchase history is updated in the mySQL database
6. Application removes pop-up and displays the home page

User Story 6

1. User clicks on the history tab.
2. User is able to scroll and view their order history.

    2.1. User clicks on a specific order.
    2.2. User views the trip info with order information for that order.
3. User chooses to see their order history in table format.
    3.1. User chooses to view their history during a specified week.
    3.2. User chooses to view their history on a specified day.
    3.3. User chooses to view their history during a specified period of time.
4. User leaves history tab.

User Story 7

1. User's caffeine intake reaches/exceeds 300 mg/day
2. User opens up application to and a pop-up appears and alerts the user that they are nearing the 400mg/day mark.
3. Pop-up alerts continue to alert the user in 50 mg caffeine increments.
4. User stops drinking coffee within 24 hours of that day.

User Story 8

1. User clicks on recommendations tab.
2. User is able to see various recommended drinks.
    2.1. User has not purchased a minimum of 7 drinks and therefore the user is unable to see recommended drinks.
3. User clicks on a specific drink.
4. User is able to see all of the locations where they can purchase that specific drink.
5. User leaves the recommendations tab.

User Story 9

1. Merchant opens the app to the login page.
2. Merchant is already registered in the system as a merchant and clicks the toggle at the top of the page to switch to the merchant login.
    2.1. Merchant is not already registered in the system as a merchant and clicks the register button.
    2.2. Merchant toggles the button at the top to switch from customer registration to merchant registration.
    2.3. Merchant fills out the merchant registration form and clicks submit.
    2.4. Merchant is taken to the merchant homepage (separate from customer homepage)
3. Merchant fills out login information and clicks login.
    3.1. Merchant is not already registered in the system as a merchant and an error message is displayed.
    3.2. Merchant is taken to the registration page.

   3.3. Merchant toggles the button at the top to switch from customer registration to merchant registration.
   3.4. Merchant fills out the merchant registration form and clicks submit.
4. Merchant is taken to the merchant homepage (separate from customer homepage)

User Story 10

1. Merchant clicks on the order history tab in their profile.
2. A table of orders, quantities, and timestamps are populated from MySQL database
   2.1. No orders have been recorded in the app. A message is displayed instead of a table that no orders have been recorded yet.
3. Merchant exits from history tab

User Story 11

1. Merchant clicks on the menu tab in their profile.
2. Menu items and descriptions are populated from MySQL database.
3. Merchant clicks to edit their store's menu.
4. Merchant clicks add new menu item button.
   4.1. Merchant is routed to a menu item form page.
   4.2. Menu inputs description, flavor, size, price, and/or nutritional value
   4.3. Merchant's menu table in MySQL database is updated.
5. Merchant clicks remove on a menu item.
   5.1. Menu item is deleted from merchant's menu table in MySQL database
6. Merchant exits from menu tab on their profile.

User Story 12

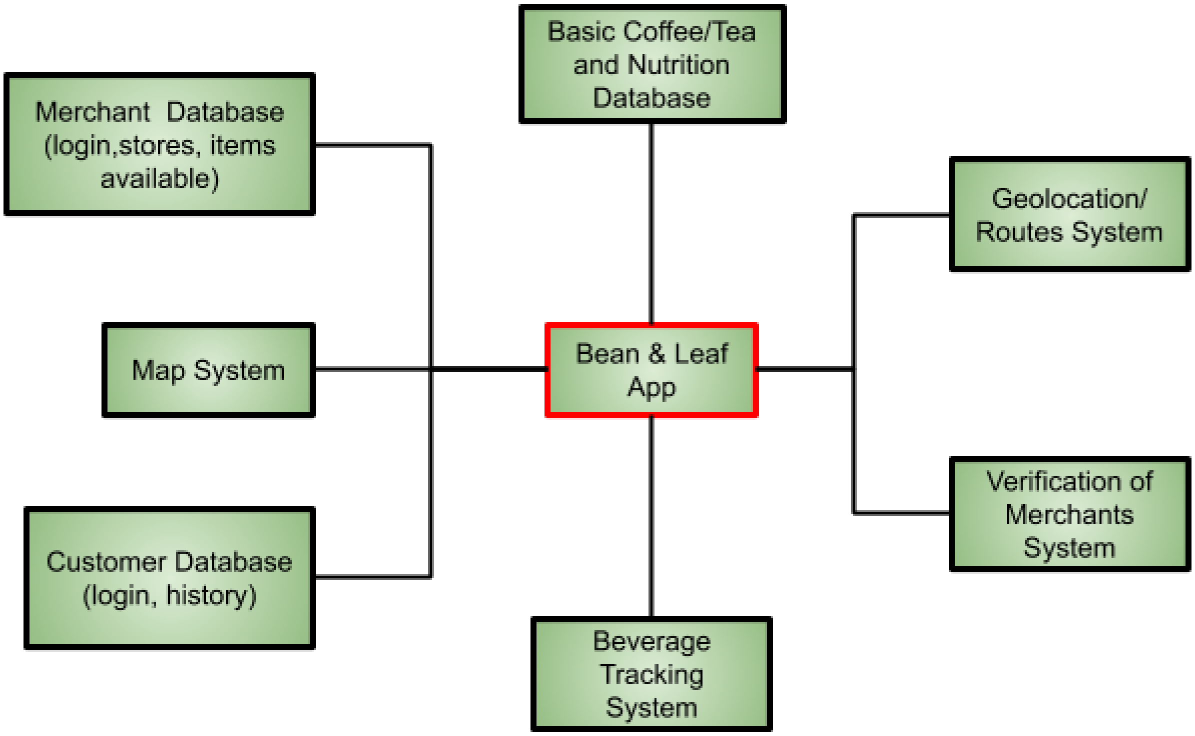
1. Merchant clicks on the settings tab in their profile.
2. Merchant already has multiple stores registered to the same account so the change store button is highlighted and clickable. Merchant clicks on the button.
   2.1. Merchant only has one store registered to the account so the change store button is not clickable.
3. Merchant is prompted with a list of registered stores. The current store selected has a checkmark next to it.
4. Merchant selects a store that is different from the one currently selected.
5. The profile page is reloaded and the new store name is displayed at the top.
6. Merchant exits from settings tab.

Non-functional Requirements

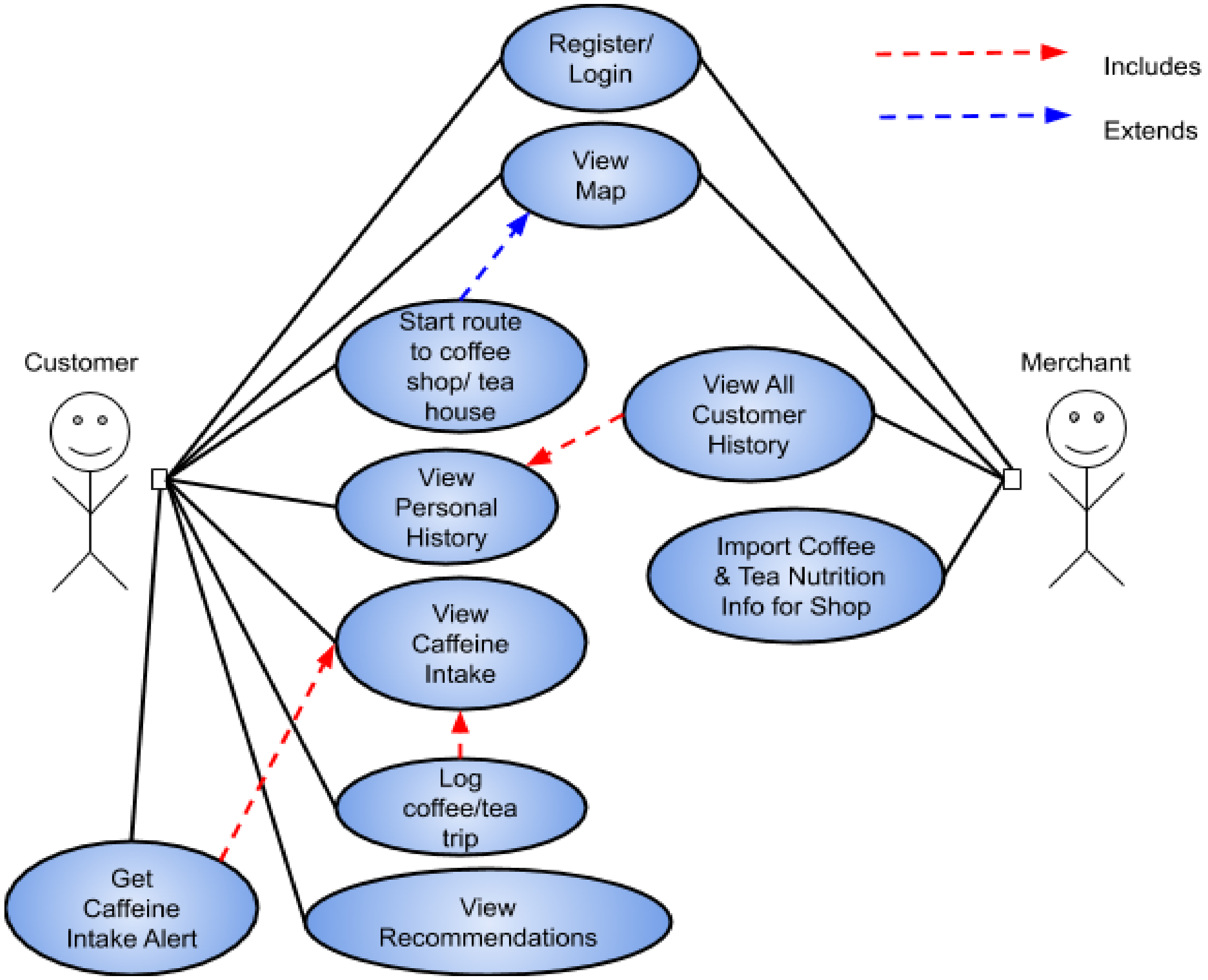
1. Speed
    a. Users should not wait longer than 30 seconds for any given component of the application to load (directions, menus, etc.).
2. Capacity
    a. We intend for capacity to not be an issue when it comes to merchants entering store data or customers storing order history, at least for the purposes of this project. For both merchants and customers, users should be able to upload a maximum of one gigabyte of data.
3. Security
    a. Merchants should not be able to access specific user data such as location, purchase history, usernames, etc.

VII. **System Model** (one of the diagrams below) (Mallika)

Context Diagram


Basic Coffee/Tea and Nutrition Database
Merchant Database (login,stores, items available)
Geolocation/ Routes System
Map System
Bean & Leaf App
Verification of Merchants System
Customer Database (login, history)
Beverage Tracking System

Use Case Diagram


Register/ Login
Includes
Extends
View Map
Start route to coffee shop/ tea house
Customer
View All Customer History
Merchant
View Personal History
Import Coffee & Tea Nutrition Info for Shop
View Caffeine Intake
Log coffee/tea trip
Get Caffeine Intake Alert
View Recommendations