



**TERM PROJECT-**  
**FOOD TRUCK LOCATOR**  
**Team Pixel Mavericks- Group 14**

**ITCS-6112-090 SPRING 2023**  
**SOFTWARE SYSTEMS DESIGN AND**  
**IMPLEMENTATION**

**Submitted by**

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# ABSTRACT

Food trucks have become increasingly popular in recent years, offering a variety of unique and delicious foods that are not typically found in traditional restaurants. However, finding these food trucks can be a challenge, as they often move around from location to location. To solve this problem, an application called "Food Truck Locator" has been developed. The Food Truck Locator application allows users to locate nearby food trucks based on their current location. Users can also search for food trucks by cuisine type or name. And at the same time, we also help increase the revenue of food trucks by having them update their location of the food truck everyday, update their menu for the day. The application displays a map with the locations of nearby food trucks and provides details about each truck, such as its menu, operating hours, and customer reviews.

# INTRODUCTION

**Central Idea of the Project:** To develop a web-based extendable platform for finding the food trucks around us that are moving every day.

**Intended use of the system:** This application will be used by food trucks to indicate their everyday location and also used by the food truck loving customers who can track which food trucks are nearby and get their daily updated location.

## **Its overall functionality:**

The Food truck finder application will give the food truck team the following functionalities:

1. Registration Page: The food truck team needs to register by entering their details into this page.
2. Login Page: Each food truck team will have multiple login credentials so that everyone will have their own account but ultimately manage their food truck profile.
3. Location tag: A member of the team can set their food truck location for a day.
4. Edit/ Update Menu: With the provided interface, a member of the food truck team can make changes to their menu, daily specials, etc.

The consumer/ user of the application will have the following functionalities:

1. User Registration/Login: A consumer will be able to login or register through this page.
2. Find Food trucks around user: A user will be able to locate food trucks around his current location or location he entered.
3. Food Truck Profile: We will be able to see the location and live menu of the food truck.
4. Ratings and Reviews: A user will be able to rate or review a food truck after their meal.
5. Location to Mobile: Send food truck location to user phone as a message link.

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# SYSTEM REQUIREMENTS

## USE CASE DIAGRAM



## USER STORIES

S.No	USER STORY	PRECONDITIONS	POSTCONDITIONS	IS EPIC
1	As a user, I want to login or register in the food truck locator, so that I can use all the features of the application.	Valid email ID		No
2	As a user, I want to view a map of my current location and the locations of the nearby food trucks, so that I can find food trucks near me either searching by location or by name.	1		Yes
3	As a user, I want to view details of a specific food truck, so that I can see its menu, operating hours, and customer reviews.	1		No
4	As a user, I want to be able to access the reviews, so that I can add a review to a specific food truck to share my experience with other users.	1		
5	As a food truck owner, I want to register and login in the food truck locator application, so that I can use all features of the application.	Valid email ID		No
6	As a food truck owner, I want to add the food truck location to the map, so that the users can find it.	2		No
7	As a food truck owner, I want to access the food truck details, so that I can update the menu, operating hours, and other details of the food truck.	2		No
8	As a food truck owner, I want to change the food truck location on the map, so that if I am moving I can update the location and users can find it.	2		No
9	As a food truck owner/ user, I want update user account details and credentials	2		No

# SPRINT REPORTS

## SPRINT- 1

Upon completion of the first sprint, we were able to achieve the target of implementation of initial user stories i.e., the primary functionalities for both the consumer and food truck owners. These implemented functionalities include allowing the consumer or food truck owner to register and create accounts on the application allowing them to login and access, letting the consumer find nearby food trucks, enabling food truck owners to set their truck location on a map for the consumers.

### User Stories Implemented

- User Story 1- As a user, I want to login or register in the food truck locator, so that I can use all the features of the application.
- User Story 2- As a user, I want to view a map of my current location and the locations of the nearby food trucks, so that I can find food trucks near me.
- User Story 4- As a food truck owner, I want to login or register in the food truck locator application, so that I can use all features of the application.
- User Story 7- As a food truck owner, I want to add the food truck location to the map, so that the users can find it.

### Changes

The creation of separate interfaces for consumers and food truck owner led us to the realization of providing both the kinds of users with a feature to update their login credentials post account creation in the future. It also led us to the identification of the need to restructure the relations and modify the tables in the database. The main goal of this task is to optimize data access and storage, as well as to improve the data integrity and consistency.

Post the discovery of said changes, the following stories have been added to the product backlog:

- User Story 11 - As a user or food truck owner, I want to update my login credentials as and when required in the future after I have created/ registered my account in the application.
  - a. Pre-conditions: Valid email id
  - b. Post-conditions:
  - c. Is Epic: No
- User Story 12 - As a developer, restructure and reorganize the database to increase efficiency and improve accessibility and readability.
  - a. Pre-conditions:
  - b. Post-conditions:
  - c. Is Epic: No

## Reflection

During our sprint cycle, we recognized the importance of focusing on the most critical user stories to achieve our project objectives within the given time frame. We understood the significance of breaking down complex user stories into smaller, achievable tasks to ensure successful completion of the sprint. After careful evaluation, we decided to prioritize the implementation of user stories 1, 2, and 4, which primarily deal with user login, registration, and viewing food truck locations on a map.

For User Story 1, we created a login/registration page for users and implemented a user authentication system to verify login credentials. For User Story 2, we used a mapping API to display the user's current location on a map and queried for nearby food trucks to display on the map. We also allowed users to filter and sort the list of nearby food trucks. For User Story 4, we created a separate login/registration page for food truck owners and implemented a user authentication system to verify their login credentials.

Although we were unable to complete User Story 3 within the sprint, we plan to prioritize it in the next sprint cycle. Our team recognized the importance of focusing on the most critical functionalities to ensure the successful completion of the sprint, and we plan to use this insight in future sprints to prioritize and execute our project objectives effectively.

## Pending User Stories

Story 3. As a user, I want to search for food trucks, so that I can find food trucks based on their name, etc..

- a. Pre-conditions: 1
- b. Post-conditions:

Story 5. As a user, I want to view details of a specific food truck, so that I can see its menu, operating hours, and customer reviews.

- a. Pre-conditions: 1
- b. Post-conditions:

Story 6. As a user, I want to be able to access the reviews, so that I can add a review to a specific food truck to share my experience with other users.

- a. Pre-conditions: 1
- b. Post-conditions:

Story 8. As a food truck owner, I want to access the food truck details, so that I can update the menu, operating hours, and other details of the food truck.

- a. Pre-conditions: 2
- b. Post-conditions:

Story 9. As a food truck owner, I want to change the food truck location on the map, so that if I am moving I can update the location and users can find it.

- a. Pre-conditions: 2
- b. Post-conditions:

Story 10. As a food truck owner, I want to schedule the food truck locations for the future, so that users can find the food trucks in their location ahead of time.

- a. Pre-conditions: 2
- b. Post-conditions:



Story 11. As a user or food truck owner, I want to update my login credentials as and when required in the future after I have created/ registered my account in the application.

a. Pre-conditions: Valid registered account

b. Post-conditions:

Story 12. As a developer, restructure and reorganize the database to increase efficiency and improve accessibility and readability.

a. Pre-conditions:

b. Post-conditions:

## **Future Work**

For sprint two, we mainly plan to implement the user stories 5, 8, 9, 10 and 12.

It can be observed that these stories are related to the implementation of application functionalities for the food truck owner. By the end of sprint two, the significant features such as displaying food truck details and menus, feature to update the aforementioned details, post current and future locations of the truck, etc., will be developed, ready for the food truck owners to use.

## **SPRINT- 2**

In the second sprint, our team accomplished the objective of implementing a secondary set of user stories, which focused on developing functionalities for food truck owners. We were successful in designing and implementing features that would be beneficial for food truck owners to manage their business operations efficiently. These features include displaying food truck details and menus, feature to update these details, update current location of the truck and schedule future locations of the truck.

### **User Stories Implemented**

- User Story 5- As a user, I want to view details of a specific food truck, so that I can see its menu, operating hours, and customer reviews.
- User Story 8- As a food truck owner, I want to access the food truck details, so that I can update the menu, operating hours, and other details of the food truck.
- User Story 9- As a food truck owner, I want to change the food truck location on the map, so that if I am moving I can update the location and users can find it.
- User Story 10- As a food truck owner, I want to schedule the food truck locations for the future, so that users can find the food trucks in their location ahead of time.

### **Changes**

Upon coming to the implementation of user story 12, we have decided, that as we still have to implement functionalities for consumers to wait reorganization of the database as it involves multiple attributes to be considered and cross referenced from both consumer and food truck owners ends.

Hence, we have chosen to delay this user story until the following sprint to complete our intended user stories. No additional user stories have arisen in this sprint.

## **Reflection**

The lessons learnt in sprint one helped us to work better in sprint 2 by breaking larger stories into smaller components and working effectively towards implementing them. The insights that we gained while implementing location pointing and positioning and pinning of food trucks on a map have been useful and they will certainly be of significant help for us when we will implement application functionalities for consume in the subsequent sprint.

## **Pending User Stories**

Story 3. As a user, I want to search for food trucks, so that I can find food trucks based on their name, etc..

a. Pre-conditions: 1

b. Post-conditions:

Story 6. As a user, I want to be able to access the reviews, so that I can add a review to a specific food truck to share my experience with other users.

a. Pre-conditions: 1

b. Post-conditions:

Story 11. As a user or food truck owner, I want to update my login credentials as and when required in the future after I have created/ registered my account in the application.

a. Pre-conditions: Valid registered account

b. Post-conditions:

Story 12. As a developer, restructure and reorganize the database to increase efficiency and improve accessibility and readability.

a. Pre-conditions:

b. Post-conditions:

## **Future Work**

For sprint three, we mainly plan to implement the user stories 3, 6, 11 and 12.

It can be observed that these stories are related to the implementation of application functionalities for the food truck owner. By the end of sprint two, the significant features such as enabling the user to search for food trucks around their current location, search by name, post reviews to the food trucks they have visited, allow users to update their login credentials, and as a developer to reorganize the database.

## **SPRINT- 3**

In the third sprint, we aimed at implementation of functionalities targeting the customers' needs for the usage of the application. The functionality developed included allowing the user to search for a food truck

using name, post reviews about a food truck that the user visited for other consumers to see/ refer to, allow the consumers and food truck owners to manage the login credentials of their account. In addition to this, we have worked on the implementation of the last user story, to reorganize the database by restructuring the relations and reassigning the keys, to optimize data access and storage.

### **User Stories Implemented**

- User Story 3- As a user, I want to search for food trucks, so that I can find food trucks based on their name.
- User Story 6- As a user, I want to be able to access the reviews, so that I can add a review to a specific food truck to share my experience with other users.
- User Story 11- As a user or food truck owner, I want to update my login credentials as and when required in the future after I have created/ registered my account in the application.
- User Story 12- As a developer, restructure and reorganize the database to increase efficiency and improve accessibility and readability.

### **Changes**

There were no major changes required in the final sprint. The user stories were well-defined and comprehensive enough to cover all the required functionality and we did not end up making any modifications to the user stories. Also, it is to be noted that we did not identify any requirement that a particular user story needed to be further broken down into other user stories as there were no epics found.

### **Reflection**

During the final sprint cycle, our team focused on completing the remaining user stories and finalizing the product. We learned from our previous sprint and broke down the remaining user stories into smaller, achievable tasks to ensure successful implementation. Our team prioritized the implementation of user functionalities to enhance the food truck user experience.

For User Story 3, we will implement a search functionality that allows users to find food trucks based on their name. This feature enhances the user experience by making it easier for users to find specific food trucks quickly. User Story 6 will allow users to access and add reviews to a specific food truck. This functionality encourages users to share their experiences and provides valuable feedback to food truck owners, enhancing the overall user experience. User Story 11 allows users and food truck owners to update their login credentials at any time in the future. This feature ensures that users and food truck owners can maintain the security of their accounts and easily update their login information as needed. Finally, for User Story 12, we will implement a mapping feature that displays the user's current location and nearby food trucks. This feature makes it easier for users to find food trucks near them and enhances the overall user experience. Overall, our team is working hard to complete the remaining user stories and finalize the product. We learned from our previous sprint and focused on breaking down complex user stories into achievable tasks. We are proud of what we have accomplished and confident that our product will provide a great user experience for food truck users and owners alike.

# USER MANUAL

## Deployment

Food Truck Locator is an application that uses the Google Maps JavaScript API to display the locations of food trucks in real-time. The application is designed to be accessible to everyone and has features for both users and food truck managers. Users can register and login to the application to view food truck locations, menus, and specials. Food truck managers can also login and manage their truck's information, providing live updates on their locations, menus, and specials. The application has a React front-end and a Java Spring back end. The front-end handles the user interface and communicates with the back-end via REST APIs. The Java Spring back-end is responsible for managing the user authentication, food truck information, and live updates. The Java Spring REST APIs provide several endpoints for managing the application's features. These endpoints include user authentication, food truck location updates, and menu updates. The user authentication endpoint allows users and food truck managers to login to the application securely. The food truck location update endpoint allows food truck managers to update their truck's location in real-time, while the menu update endpoint allows them to update their menus and specials. The Java Spring back-end also includes a database layer that stores the application's data. This layer is responsible for managing the application's data and ensuring that it is updated in realtime. Food Truck Locator will be hosted on Heroku and will be accessible via a public URL. The application is still in development, but we plan to make it available as a web application in the near future.

## Main Features

The main features of our web application are as follows. This application has been designed and developed with the objective of aiding two kinds of end users, namely consumers/users and food truck owners. Both kinds of users can register, login and use the application. Post registration, the consumers can view a map of their location and the locations of the nearby food trucks based on their current location, search for the food truck of their choice based on its name, view details of a specific food truck, such as its menu, operating hours, and reviews of the food trucks can be posted by the customers. Furthermore, the users can mark any of the food trucks as their favorites and post reviews about the food trucks they have visited. Similarly, after successful registration, food truck owners can add the food truck location to the map, so that the users can find it, access the details of the food truck, so that they can edit and update the menu, operating hours, and other details of the food truck on a regular basis, add, change/ update the food truck location to the map, so that the users can find it. Additionally, the owners can schedule the future locations of the food truck and can access the customer reviews and can post their replies for the same.

## Main Walkthrough

The foremost and significant feature of our application is for the consumer/ user to find food trucks based on their current location in and around their vicinity with great ease. For the user to do so, the prerequisite is to register with the application and create a profile. After registration through email ID and authentication by logging in, the customer will be sharing their current location and based on this location data, the customer will be displayed their location and the locations of nearby food trucks based on the radius of surroundings selected from their current location. From the resultant set of options, which will be displayed

on a very detailed map, the customer can select the food truck of their choice and get directed to go towards it. Consequently, they can access the other features such as marking favorites and posting reviews.

Similarly, the food truck owner is also required to register with the application. Post registration through email ID and authentication by logging in, the food truck owner will be sharing their current location and based on this location data their food truck location will be displayed on the map, also they are permitted to drag their location marker on the map to the location of their choice which will be automatically saved until any further changes. Subsequently, the food truck owners are also given with the permission to edit details of their food truck such as operating hours, menus, etc. And they can also schedule the locations of their food trucks for operations in the future, as this feature would be of great use to the consumers for planning their visits in advance. Furthermore, they can access the reviews posted by customers and post replies for the same.

## **Alternative Walkthroughs**

The following are the additional operations the users or food truck owners, correspondingly can perform based on the need of the situation to satisfy their requirements with our web application to locate food trucks based on the location.

### **Mark and find a favorite food truck**

The idea is to create a feature in a food truck finder application where users can mark their favorite food trucks. This would allow users to quickly access information about their favorite food trucks every time they open the app. To use this feature, users would simply need to find a food truck they like and mark it as a favorite. This information would be saved in the app's database, linked to the user's account. The next time the user logs in, they would be able to see their favorite food trucks displayed prominently in the app. For example, let's say a user loves a particular food truck called "Taco Town." The user can mark this food truck as a favorite in the app. The next time the user opens the app, she would see "Taco Town" listed as one of her favorite food trucks. Furthermore, when the user wants to find "Taco Town" on a map, they can simply select it from the list of favorites, and the app will show them where the food truck is located. This can save their time and make their experience with the app more convenient. Overall, adding a favorites feature to a food truck finder app can enhance the user experience by allowing users to easily access information about their preferred food trucks.

### **Schedule future locations of the food truck**

The new feature that has been added to the food truck app allows food truck owners to schedule their future locations. This means that food truck owners can now select the dates and times when they will be at specific locations, which can be viewed by customers in advance. Based on time, the food truck label will pop up on the map, thereby allowing the location of food truck to change with time. This feature provides several benefits to both food truck owners and customers. For food truck owners, it can help them plan their business better by allowing them to schedule their locations in advance. They can choose locations that have been successful in the past or try out new areas that they think might be popular. This allows them to maximize their sales and profits by being in the right place at the right time. For customers, this feature makes it easier to plan their visits to their favorite food trucks. They can see where the food truck will be in the future and plan their visit accordingly. This can be especially helpful for customers who have busy schedules and want to make sure they don't miss out on their favorite food. Overall, the scheduling feature is a valuable addition to the food truck app. It provides benefits to both food truck owners and customers.

# SYSTEM WALKTHROUGH

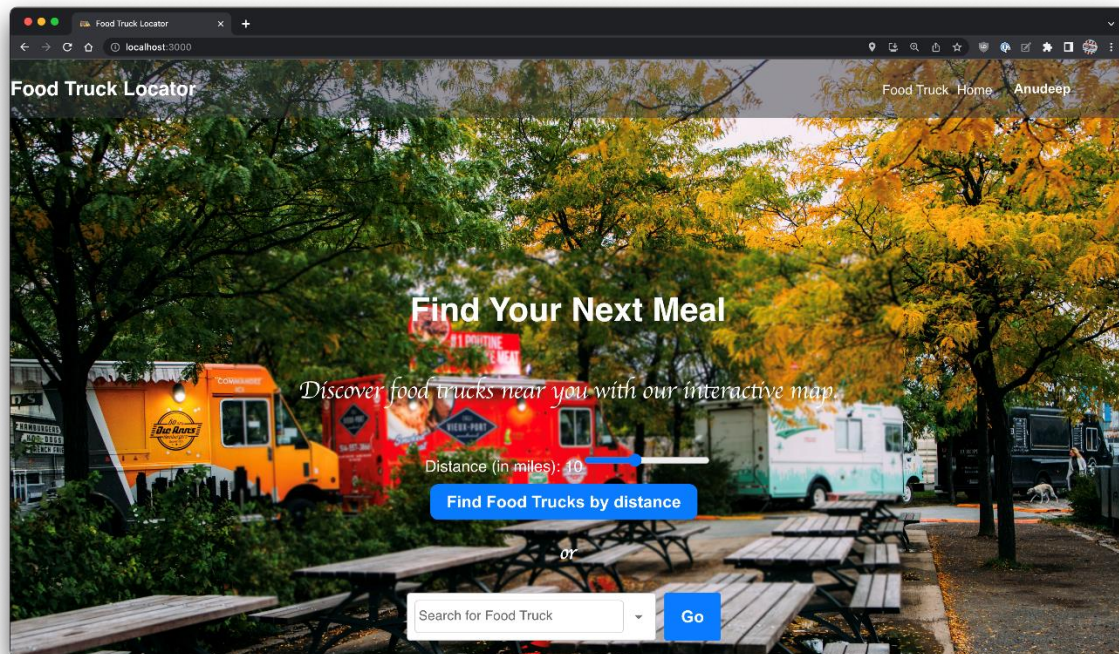


Fig 1: Homepage

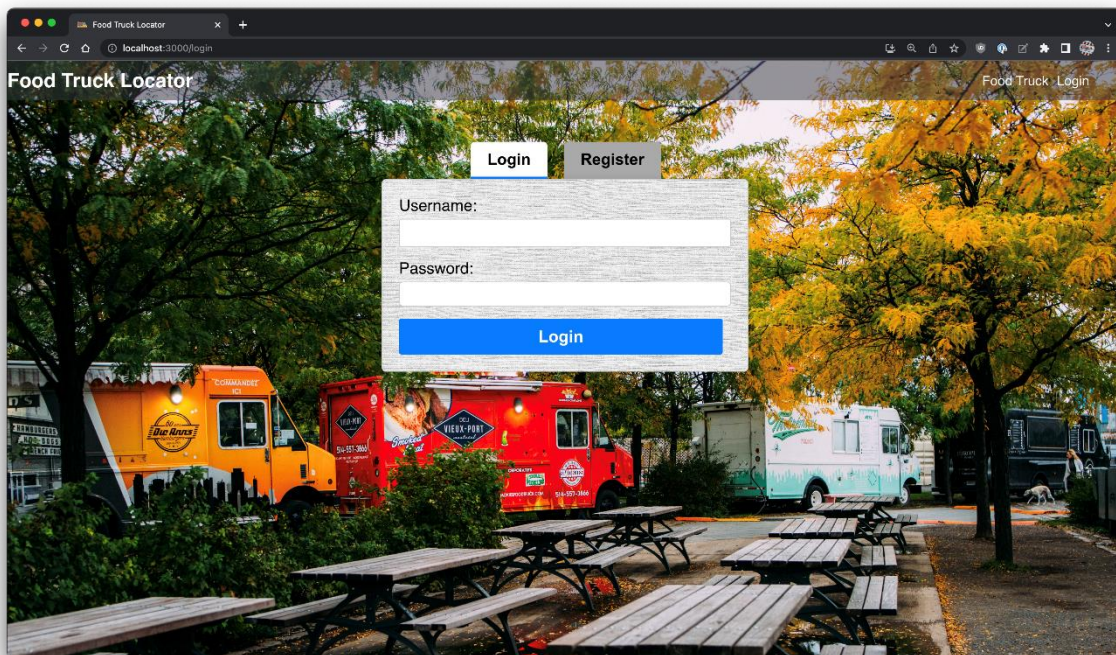


Fig 2: User/ Food truck owner login page



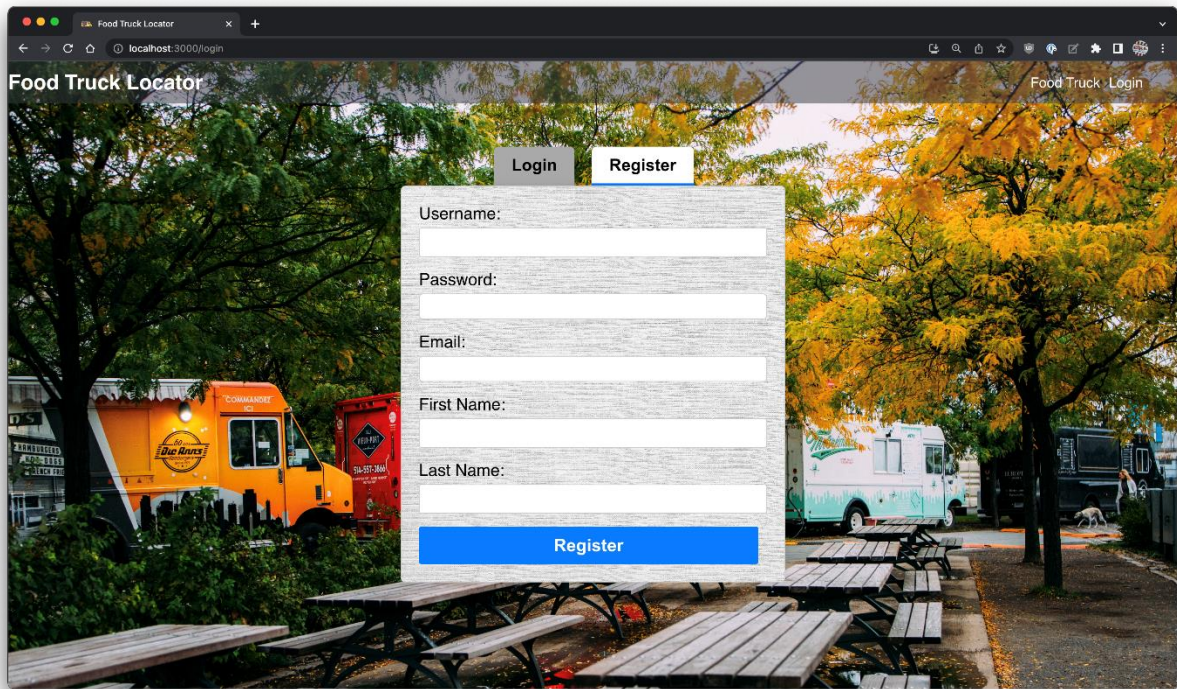


Fig 3: User registration page

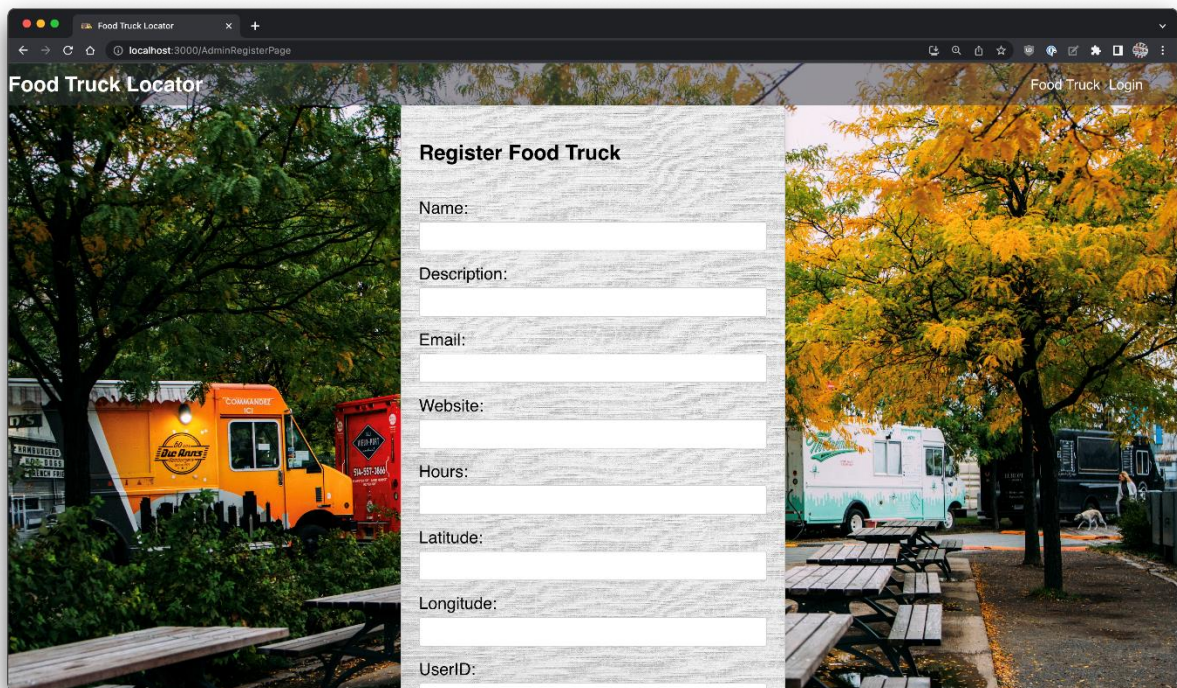


Fig 4: Food truck owner registration



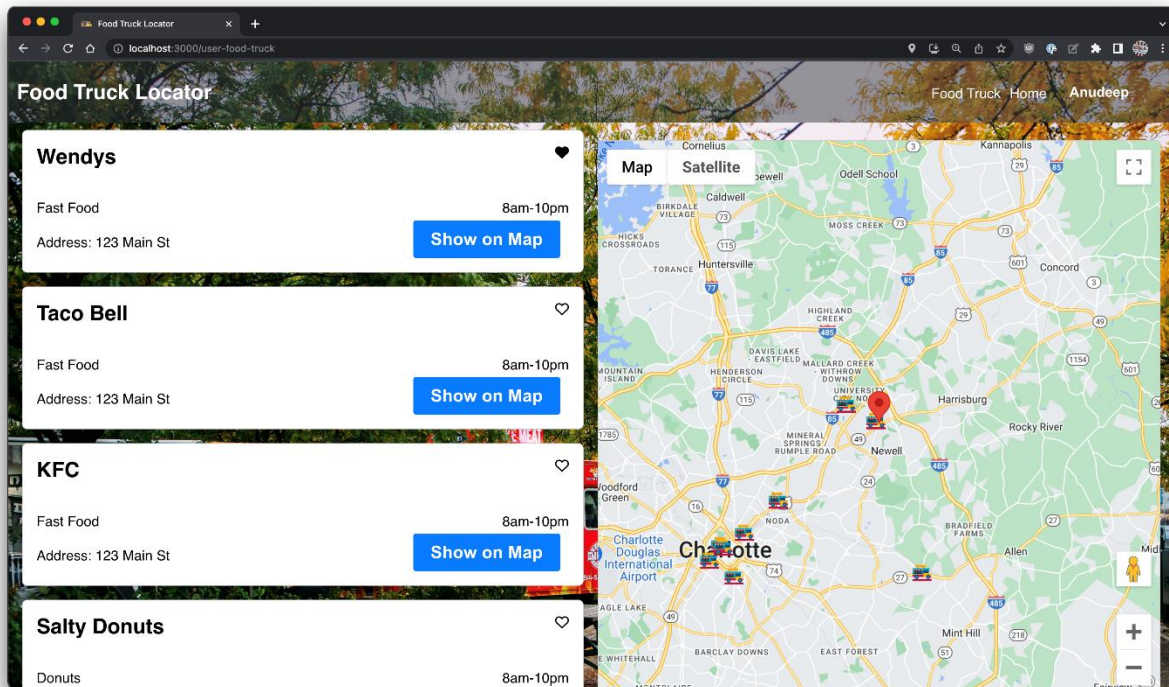


Fig 5: User landing page after login with food trucks marked on a map

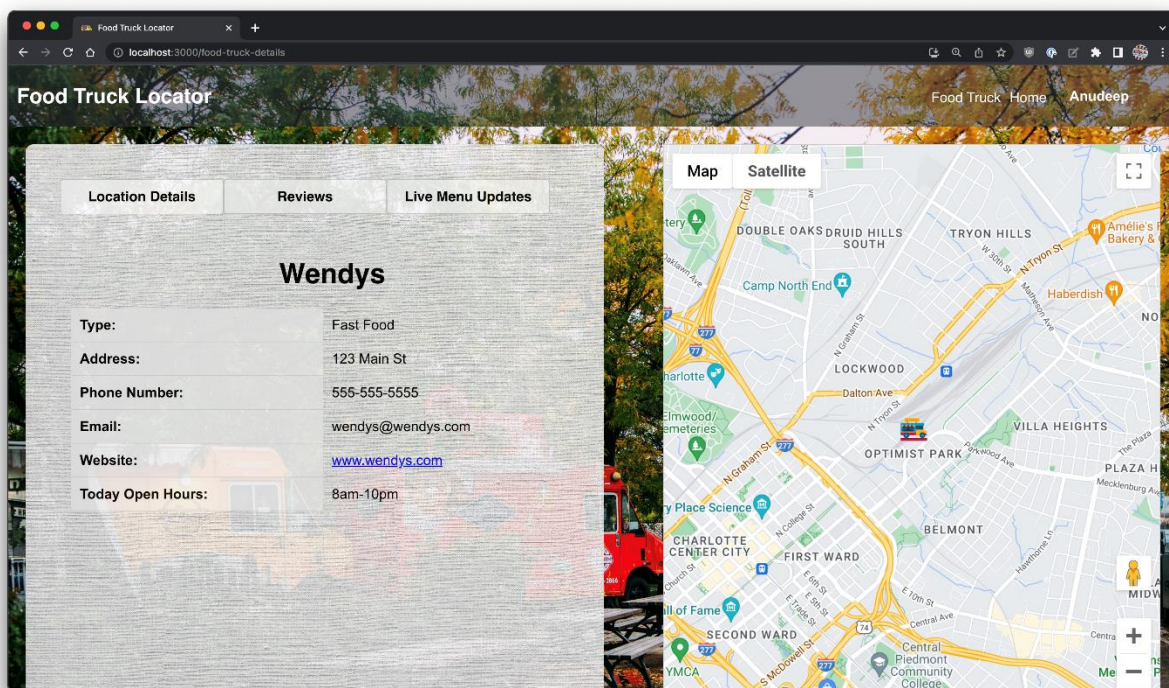


Fig 6: Food truck location & details shown to user



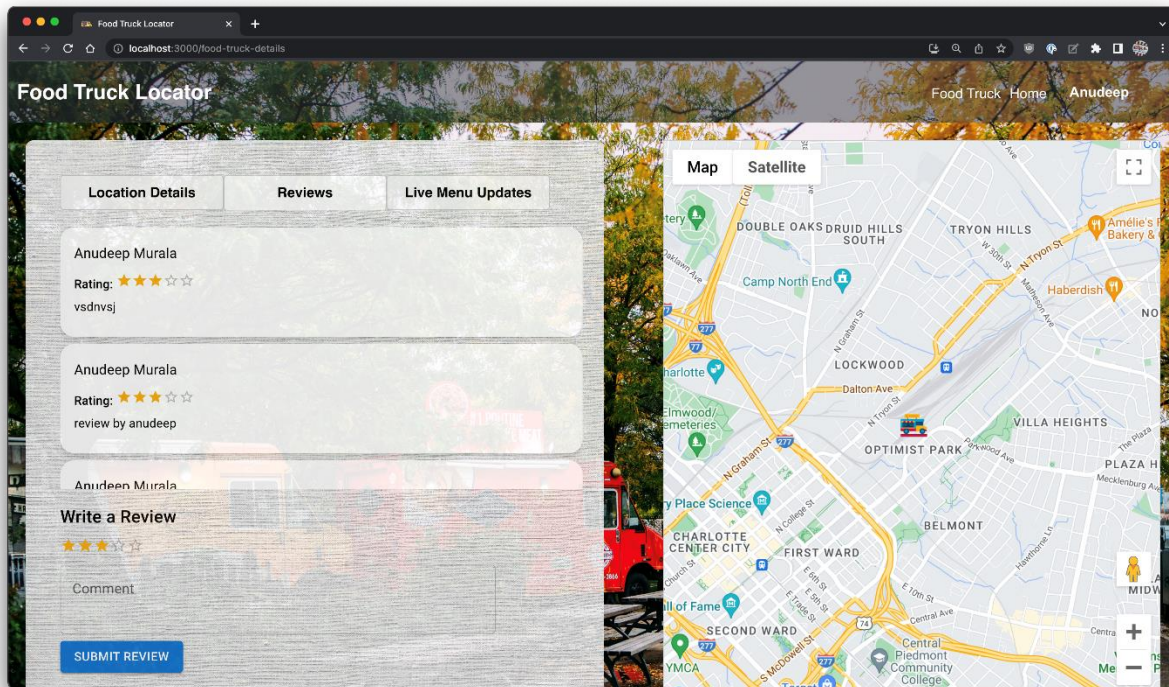


Fig 7: Food truck reviews that user can see

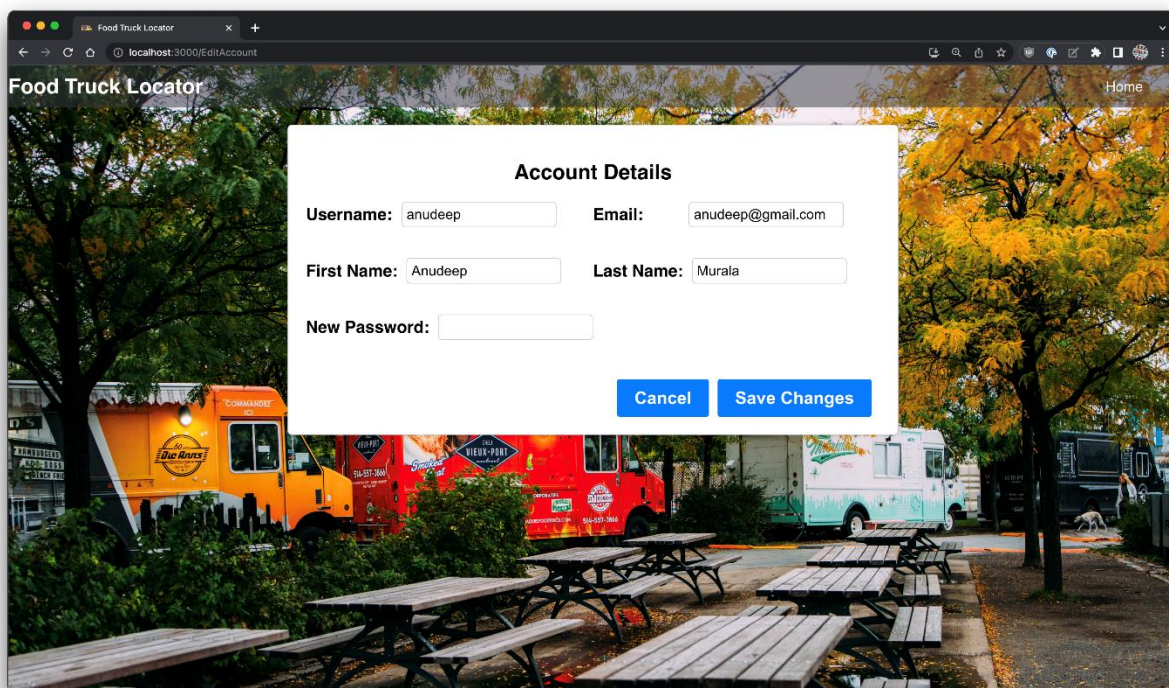


Fig 8: User account details update page



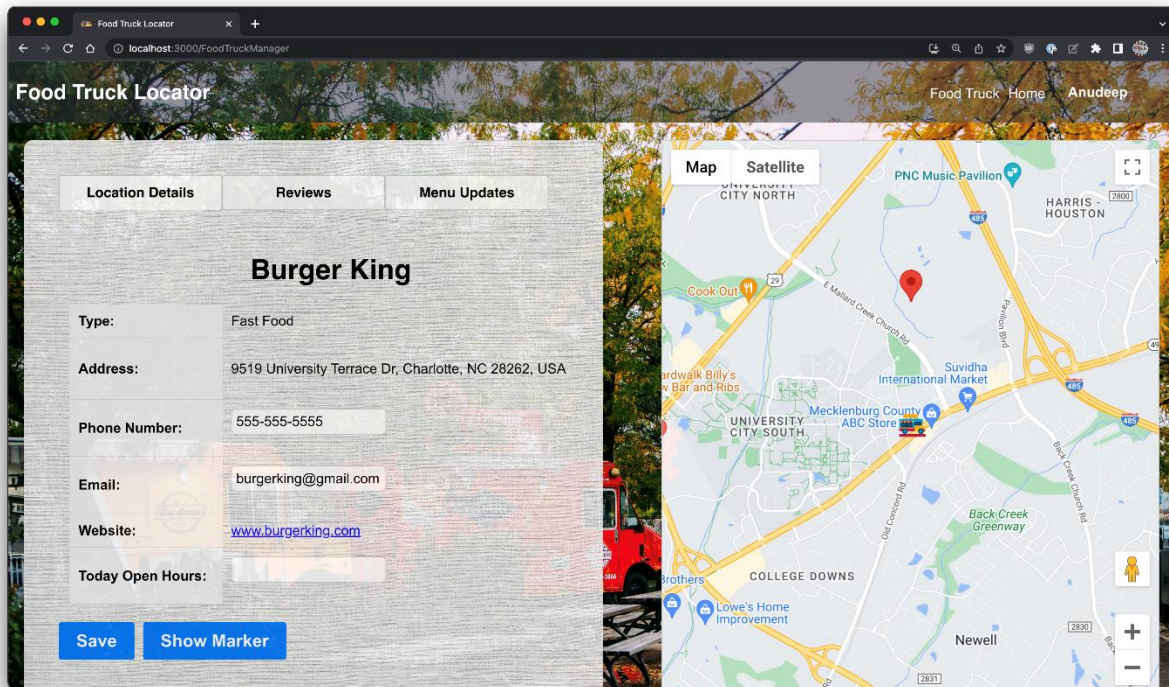


Fig 9: Food truck details update page – food truck owner

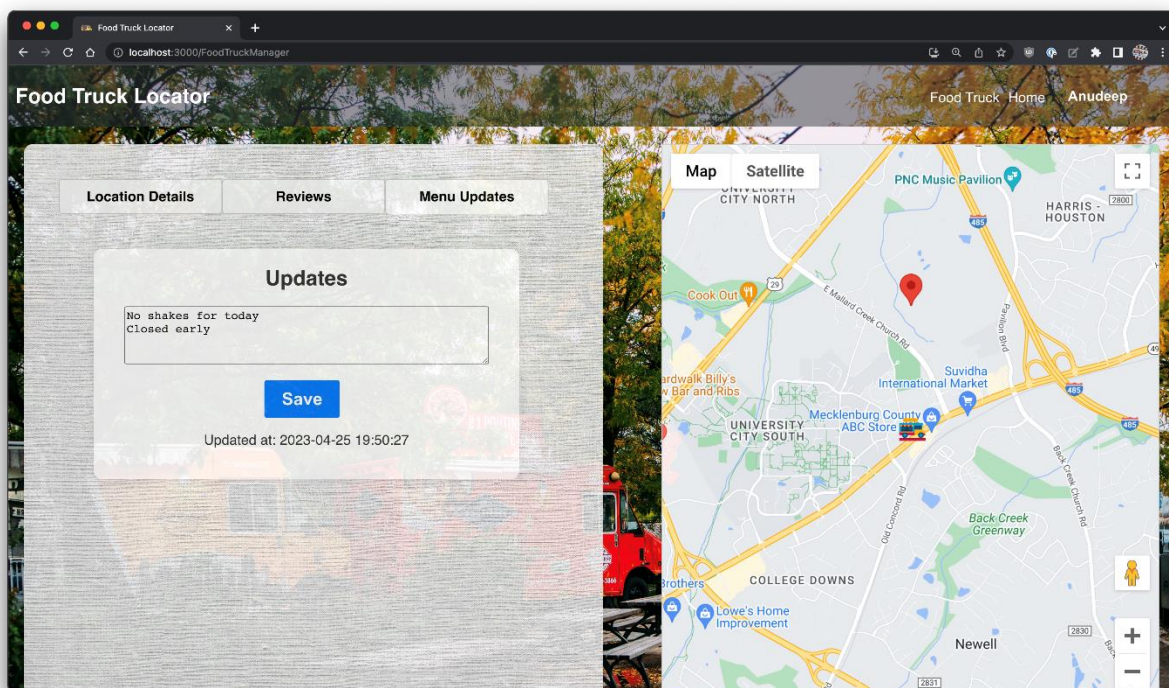


Fig 10: Food truck details update page- food truck owner

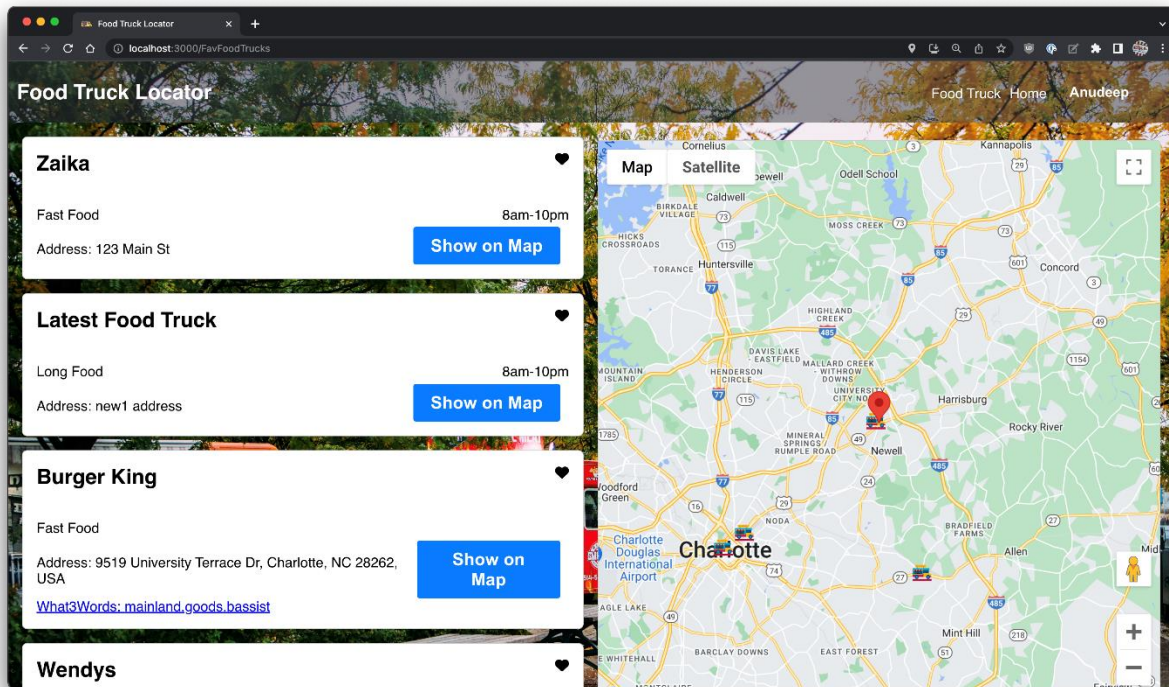


Fig 11: Marking favorite food trucks- user/ consumer

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