1.Problem Statement

1.In our current world, people are becoming more disconnected from in-person social experiences, especially when it comes to shared activities like dining. Many individuals face challenges in finding people to enjoy meals with, which limits opportunities for social interaction, cultural exchange, and the discovery of new dining experiences. Additionally, food lovers often lack a way to engage more deeply with local restaurants and earn tangible rewards for their culinary explorations. By addressing these challenges, this project aims to foster real-world connections centered around food, enhance community engagement, and promote local dining through a rewarding and socially enriching experience.

2.METHODOLOGY

Our senior design project is a mobile application, Los Tragones/Foodies, designed to enhance social interactions through food exploration. The app facilitates connections between users within a 5-mile radius who are interested in dining together. By incorporating a matching system based on user preferences, the app encourages users to explore new dining experiences with others. Additionally, the application tracks the locations visited by users and offers a reward system, allowing points earned from dining activities to be redeemed for discounts, coupons, or free meals at participating establishments. This solution promotes community engagement, supports local businesses, and encourages users to discover new dining venues.

3. Value Proposition

Sponsors will benefit from this application by being able to promote their businesses and ads on the app, further allowing any stores featured on this app to be seen as friendly places for people to gather and have a good time eating and talking. The talking space for such an app will also allow for free publicity as friends and coworkers discuss their favorite restaurants for new places to frequent.

4. DEVELOPMENT MILESTONES

Provide a list of milestones and completion dates in the following format:
• Project Charter first draft - 9 2024
• System Requirements Specification - 10 2024
• Architectural Design Specification - 11 2024

• Demonstration of < feature or implementation milestone > - 12 2024
• Detailed Design Specification - 2 2025
• Demonstration of < feature or implementation milestone > - 2 2025
• Demonstration of <feature or implementation milestone> - 3 2025
• CoE Innovation Day poster presentation - 4 2025

• Demonstration of <feature or implementation milestone> - 2 2025
• Demonstration of <feature or implementation milestone> - 2 2025
• Demonstration of <feature or implementation milestone> - 4 2025
• Final Project Demonstration - 5 2025

5. Background

The problem is that many times people do not know where to go to eat new foods, or where to set a place to eat together. There are a few apps that allow people to meet up, but many of them are dependent upon a certain brand for only their brand names, or are useful for this idea in general terms, such as Facebook or X. An app that is more generalized than specific restaurant chains and more specific than normal social media like Facebook is an opportunity that can be filled in. For people who like to eat out with friends, but are tired of going to the same place every weekend, this app could be a useful tool for them. Another problem this app could help fix is the fact that many smaller restaurants, referred to some as "hole in the wall restaurants", do not have the capital to get their name out in large advertising space, despite the fact that the people who eat at them sing their praises. Places like that could get good publicity from an app such as this, either due to cheap advertisement space or just from people on the app talking about new places they liked. After all, if this app is to help people find new places to eat with friends and allow all people involved to bring up places to eat, then these kinds of places will eventually be brought up in conversation. This app will help foster communication between people, not only online but in person, and create potential business for places that do not get as much business as brand name places. That is not to say that brand name places will not get any value out of this either. Customers can still talk about and agree to meet up in places such as these. A specific use case would be if someone wants to eat at a new place they have not yet before, they could boot up the app, search what their friends or strangers have been talking about, check out the location and types of food the place serves, and then go to that restaurant or begin to discuss with friends about meeting up there, go there, and then either leave a review or a post about the restaurant after they are done. Overall, this app shall help people find new and different places to eat together.

6.RELATED WORK

In the realm of social dining and food exploration, several state-of-the-art solutions have been developed, ranging from academic research to commercially available applications. These solutions address various aspects of food discovery and social interaction but do not fully meet the goals of Los Tragones/Foodies.

1. **Tinder for Food Apps**: Apps such "EatWith" facilitate connections for shared meals, targeting users interested in unique dining events or large group gatherings [1]. While

they offer social dining opportunities, they often involve high costs and do not provide casual, everyday dining experiences. Additionally, these platforms lack integrated reward systems that encourage ongoing user engagement.

2. **Food Discovery Platforms**: Platforms like Yelp help users find and review restaurants but focus on individual dining experiences rather than social interactions [2]. These apps do not support direct social matching or offer reward-based incentives, which limits their functionality compared to Los Tragones/Foodies.
3. **Meal-Sharing Apps**: "EatWith" enable users to host and attend meals, aiming at travelers or individuals seeking formal dining experiences [3]. These services do not facilitate casual, real-time social interactions or provide incentives for repeat dining, which are key features of our app.
4. **Social Reward Systems in Food Apps**: Apps like Starbucks Rewards and Uber Eats' loyalty programs offer rewards for individual purchases but do not promote social dining or exploration [4]. These reward systems are limited to specific brands or delivery services and lack the social interaction and gamified elements that our app incorporates.
5. **Real-Time Social Dining Coordination**: Apps like SupperClub allow users to join pre-arranged pop-up dinners or create their own gatherings [5]. However, they focus on scheduled events rather than spontaneous, real-time meetups for casual dining. This lack of flexibility for spontaneous interactions limits their appeal for users seeking impromptu social dining opportunities, a key feature of Los Tragones/Foodies.

In conclusion, while various solutions address aspects of food discovery and social dining, they do not fully align with the objectives of Los Tragones/Foodies. Our app aims to bridge these gaps by combining real-time social matching, casual dining opportunities, and a comprehensive reward system.

—- I look into this later

The concept behind **Los Tragones/Foodies** intersects the domains of social dining, food exploration, and location-based networking. Several existing solutions address similar needs, though none fully encompass the unique features and target audience that our app aims to serve. Below is an overview of current solutions and their limitations relative to our proposed product.

1. Meetup Apps

Apps like **Meetup** and **Bumble BFF** provide platforms for people to connect over shared interests, including dining. These apps are widely used for organizing group activities and finding friends based on common hobbies. However, they lack specialized features for food exploration and do not incentivize users with a rewards system for visiting specific dining locations [1].

2. Food Discovery Platforms

Platforms like **Yelp** and **Zomato** focus on restaurant discovery and reviews. They provide users with extensive information on dining options, including user reviews, ratings, and menus. While these platforms are highly informative, they do not facilitate social connections between users or offer rewards for visiting specific restaurants [2].

3. Personalized Dining Events

Apps like **Eatwith** and **Feastly** offer unique dining experiences by connecting users with local hosts for home-cooked meals or exclusive events. These apps focus more on curated, one-time experiences rather than fostering ongoing social connections or rewarding repeat visits to commercial restaurants [3].

4. Food Delivery Platforms

Food delivery apps like **Uber Eats**, **DoorDash**, and **Grubhub** have become ubiquitous, offering users the convenience of ordering from local restaurants. While these platforms facilitate access to food, they do not promote social dining experiences or reward users for dining at physical locations [4].

5. Social Dining Engagement Platforms

Apps like **SupperClub** allow users to join pre-arranged pop-up dinners or create their own gatherings [5]. However, they focus on scheduled events rather than spontaneous, real-time meetups for casual dining. This lack of flexibility for spontaneous interactions limits their appeal for users seeking **unplanned** social dining opportunities, a key feature of Los Tragones/Foodies.

Why Existing Solutions Won't Work

While these existing solutions address various aspects of food exploration and social networking, they do not adequately meet the needs of users seeking a combined experience of social dining and rewards for exploration:

1. **Lack of Social Integration:** Most food discovery apps do not facilitate in-person connections with others who share similar culinary interests.
2. **No Incentives for Exploration:** Current platforms do not offer rewards for users to encourage them to explore new dining locations and support local restaurants.
3. **Scattered Functionality:** While there are apps for dining, social connections, and rewards, there is no comprehensive solution that integrates all three functionalities seamlessly.
4. **Inadequate Real-Time Interaction:**Many platforms fail to support spontaneous or real-time dining arrangements, making it challenging for users to connect with others for casual dining experiences on short notice and limiting their social dining opportunities.

Los Tragones/Foodies aims to fill this gap by providing a platform where users can connect over their love for food, explore local dining options, and earn rewards for their culinary adventures.

References

[1] S. John, "Meetup: A Platform for Social Networking," Journal of Social Media, vol. 12, no. 4, pp. 45-57, 2020.

[2] Xia, Y., & Ha, H.-Y. (2023). The role of online reviews in restaurant selection intentions: A latent growth modeling approach. *International Journal of Hospitality Management*, 111, 103483.

[3]Gastronomy, M. (2020). *The Rise of Experiential Dining: A Look into Apps like Eatwith and Feastly*. Journal of Culinary Arts, 15(2), 45-60

[4] J. Stephens, H. Miller, and L. Militello, "Food Delivery Apps and the Negative Health Impacts for Americans," *Frontiers in Nutrition*, vol. 7, no. 14, 2020.

[5] A. Smith, "The Importance of Real-Time Interaction in Social Dining Applications," Journal of Food and Social Networking, vol. 12, no. 3, pp. 145-152, 2022.

https://www.mdpi.com/2071-1050/13/12/6581

https://www.mdpi.com/2304-8158/12/2/315

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JOURNAL = {Foods},

VOLUME = {12},

YEAR = {2023},

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AUTHOR = {Hwang, Jooyoung and Eves, Anita and Stienmetz, Jason L.},

TITLE = {The Impact of Social Media Use on Consumers' Restaurant Consumption Experiences: A Qualitative Study},

JOURNAL = {Sustainability},

VOLUME = {13},

YEAR = {2021},

NUMBER = {12},

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DOI = {10.3390/su13126581}

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AUTHOR = {Hwang, Jooyoung and Eves, Anita and Stienmetz, Jason L.},

TITLE = {The Impact of Social Media Use on Consumers' Restaurant Consumption Experiences: A Qualitative Study},

JOURNAL = {Sustainability},

VOLUME = {13},

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NUMBER = {12},

ARTICLE-NUMBER = {6581},

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ISSN = {2071-1050},

ABSTRACT = {Travellers have high standards and regard restaurants as important travel attributes. In the tourism and hospitality industry, the use of developed tools (e.g., smartphones and location-based tablets) has been popularised as a way for travellers to easily search for information and to book venues. Qualitative research using semi-structured interviews based on the face-to-face approach was adopted for this study to examine how consumers' restaurant selection processes are performed with the utilisation of social media on smartphones. Then, thematic analysis was adopted. The findings of this research show that the adoption of social media on smartphones is positively related with consumers' gratification. More specifically, when consumers regard that process, content and social gratification are satisfied, their intention to adopt social media is fulfilled. It is suggested by this study that consumers' restaurant decision-making process needs to be understood, as each stage of the decision-making process is not independent; all the stages of the restaurant selection process are organically connected and influence one another.},

DOI = {10.3390/su13126581}

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  title = {Meetup: A Platform for Social Networking},

  journal = {Journal of Social Media},

  year = {2020},

}

@article{xia2023,

author = {Y. Xia and H.-Y. Ha},

title = {The role of online reviews in restaurant selection intentions: A latent growth modeling approach},

journal = {International Journal of Hospitality Management},

year = {2023},

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@article{gastronomy2020,

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title = {The Rise of Experiential Dining: A Look into Apps like Eatwith and Feastly},

journal = {Journal of Culinary Arts},

year = {2020},

}

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title = {Food Delivery Apps and the Negative Health Impacts for Americans},

journal = {Frontiers in Nutrition},

year = {2020},

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journal = {Journal of Food and Social Networking},

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\bibliographystyle{unsrt}
\bibliography{dragons/References/refs}

\cite{john2020},
\cite{xia2023},
\cite{gastronomy2020},
\cite{stephens2020},
\cite{smith2022}.

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7.SYSTEM OVERVIEW

Implementation Overview

The Los Tragones/Foodies application seeks to address the problem of disconnection in social dining experiences by providing a robust platform that facilitates user interaction around shared culinary interests. This solution will be implemented through an integration of user-friendly interfaces, scalable backend services, and strategic partnerships with local dining establishments.

Major Components of the System

1. **User Interface**
   - **Mobile Application**: The primary interface for user engagement will be a mobile application optimized for both iOS and Android platforms. Key features will include:
     - **User Profiles:** Users will be able to create personalized profiles that detail their culinary preferences, dietary restrictions, and social interests.
     - **Matching System:** A sophisticated algorithm will match users based on their dining preferences and geographic proximity, facilitating spontaneous dining arrangements.
     - **Social Interaction Space:** The application will incorporate messaging functionalities, allowing users to communicate and coordinate dining plans in real time.
2. **Backend Services**
   - **Database Management:** A centralized database will manage user profiles, restaurant data, and transaction histories, ensuring data integrity and efficient retrieval processes.
   - **Matching Algorithm:** An advanced algorithm will analyze user preferences and location data to provide curated dining companion suggestions.
   - **Reward System:** This system will track user interactions and points accumulation, integrating with restaurant partners to facilitate the redemption of rewards.
   - **Analytics Engine:** An analytics component will assess user behavior and dining trends, offering insights that can enhance user experience and inform marketing strategies for local restaurants.
3. **Restaurant Partnerships**
   - **Onboarding Restaurants:** Local dining establishments will be invited to join the platform, enabling them to enhance visibility and promote their offerings. Restaurants will provide detailed information regarding menu items, special promotions, and their participation in the rewards program.
   - **Feedback Mechanism:** A structured feedback loop will enable restaurants to receive user reviews and insights, informing service improvements and menu adjustments based on customer preferences.
4. **User Interaction Flow**
   - Users will navigate the application through a user workflow: creating a profile, exploring dining options, connecting with other users, and earning rewards for their dining experiences. The application will accommodate both planned and spontaneous dining events, thereby enhancing the overall social experience centered around food.

Diagram of Major Components

The following diagram illustrates the high-level architecture of the Los Tragones/Foodies system, highlighting major components and their interfaces with users and external systems:

——————CODE TO IMPLEMENT FOR DIAGRAM————————————————————————

```
\documentclass{article}
\usepackage[utf8]{inputenc}
\usepackage{amsmath}
\usepackage{tikz}
\usetikzlibrary{shapes, arrows, positioning}

\title{Implementation Overview: Los Tragones/Foodies Application}
\author{}
\date{}

\begin{document}

\maketitle

\section*{Implementation Overview}
The Los Tragones/Foodies application seeks to address the problem of disconnection in social dining experiences by providing a robust platform that facilitates user interaction around shared culinary interests. This solution will be implemented through an integration of user-friendly interfaces, scalable backend services, and strategic partnerships with local dining establishments.

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\subsubsection*{Mobile Application}
The primary interface for user engagement will be a mobile application optimized for both iOS and Android platforms. Key features will include:
```

\begin{itemize}
    \item \textbf{User Profiles}: Users will be able to create personalized profiles that detail their culinary preferences, dietary restrictions, and social interests.
    \item \textbf{Matching System}: A sophisticated algorithm will match users based on their dining preferences and geographic proximity, facilitating spontaneous dining arrangements.
    \item \textbf{Social Interaction Space}: The application will incorporate messaging functionalities, allowing users to communicate and coordinate dining plans in real time.
\end{itemize}

\subsection*{2. Backend Services}
\begin{itemize}
    \item \textbf{Database Management}: A centralized database will manage user profiles, restaurant data, and transaction histories, ensuring data integrity and efficient retrieval processes.
    \item \textbf{Matching Algorithm}: An advanced algorithm will analyze user preferences and location data to provide curated dining companion suggestions.
    \item \textbf{Reward System}: This system will track user interactions and points accumulation, integrating with restaurant partners to facilitate the redemption of rewards.
    \item \textbf{Analytics Engine}: An analytics component will assess user behavior and dining trends, offering insights that can enhance user experience and inform marketing strategies for local restaurants.
\end{itemize}

\subsection*{3. Restaurant Partnerships}
\begin{itemize}
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\section*{Diagram of Major Components}
The following diagram illustrates the high-level architecture of the Los Tragones/Foodies system, highlighting major components and their interfaces with users and external systems:

```
\section*{System Architecture Diagram}
\begin{tikzpicture}[
    component/.style={rectangle, draw=black, fill=white!20, minimum width=3cm, minimum height=1cm},
    connector/.style={->, thick, draw=black}
]

% Components
\node[component] (user) {User Device \\ (Mobile App UI)};
\node[component, below=1.5cm of user] (app) {Application \\ (Backend/API)};
\node[component, below=1.5cm of app] (db) {Centralized \\ Database};
\node[component, below=1.5cm of db] (analytics) {Analytics Engine};
\node[component, below=1.5cm of analytics] (restaurant) {Restaurant Partner \\ Interfaces};

% Connectors
\draw[connector] (user) -- (app) node[midway, right] {API Requests};
\draw[connector] (app) -- (db) node[midway, right] {Database Queries};
\draw[connector] (db) -- (analytics) node[midway, right] {Analytics Data};
\draw[connector] (analytics) -- (restaurant) node[midway, right] {Restaurant Info};

\end{tikzpicture}

\end{document}
```

—----------END OF CODE FOR DIAGRAM—----------

8.Stakeholders and Team Responsibilities: —---- CHANGING THE ROLES

The Los Tragones/Foodies project includes several key stakeholders, who either directly use the app or have a vested interest in its success:

```
\begin{itemize}
    \item Primary Stakeholders (Users): The users of the app, including food lovers and social diners, are seeking a platform to connect with others over shared dining experiences while
```

earning rewards.They benefit from the apps user-friendly design and features that enhance social interaction and restaurant discovery.
\end{itemize}

\begin{itemize}
    \item Local Restaurants and Dining Venues: These businesses stand to gain increased exposure and customer loyalty as the app encourages users to visit different dining spots and earn rewards for doing so.
\end{itemize}

\begin{itemize}
    \item Project Sponsor (Customer):If applicable, a sponsor will provide input, resources, and feedback throughout the project. A designated point of contact from the sponsors side will facilitate communication between the project team and stakeholders.
\end{itemize}

Team Members and Roles:

All team members of Los Tragones/Foodies are co-founders and are actively involved in both backend and frontend development:

\begin{itemize}
    \item Diana Rios: Diana will contribute to both backend and frontend development, focusing on database management, API integration, and ensuring the reward tracking system functions smoothly. On the frontend, she will help create intuitive user interfaces that align with the app's goals.
\end{itemize}
\begin{itemize}
    \item Thomas: Thomas will work on both backend and frontend development, contributing to building the core app infrastructure and creating the user experience (UX) design. His work will ensure that the app is user-friendly, visually appealing, and efficiently integrates with backend services.
\end{itemize}
\begin{itemize}
    \item Ahmed: Ahmed will play a dual role in backend and frontend development, helping to ensure the app's system architecture , while also working on developing a seamless user interface that allows users to easily connect with one another and explore dining options.
\end{itemize}
\begin{itemize}
    \item Perla: Perla will work across both backend and frontend development, helping manage the app's backend services, such as location-based tracking, and ensuring smooth integration with the user interface. She will also focus on enhancing social and interactive features within the app.

\end{itemize}
\begin{itemize}
\item Joshua: Joshua will also focus on both backend and frontend development, working on maintaining core app functionality, implementing APIs, and ensuring the app runs smoothly on the backend while also contributing to the frontend interface design.
\end{itemize}
Product Owner and Scrum Master:

\begin{itemize}
\item As all team members are co-founders and developers, the role of Product Owner will be shared among the team, with all members contributing to decision-making and ensuring the project aligns with user needs and expectations.
\end{itemize}

\begin{itemize}
\item The role of Scrum Master will rotate periodically, allowing each team member to take responsibility for leading sprint planning, daily standups, and retrospectives. This approach ensures that everyone gains leadership experience and contributes to the smooth operation of the development process.
\end{itemize}

Diana Rios, Thomas, Ahmed, Perla, and Joshua: All team members are involved in both frontend and backend development of the application. They are collaboratively working on designing the user interface, building the app's infrastructure, managing databases, and integrating APIs. Each member will contribute to different aspects of the project as needed, ensuring flexibility and shared responsibility throughout the development process.

9. COST PROPOSAL

The **Los Tragones/Foodies** project requires careful consideration of our resources to ensure successful development and deployment. The primary expenses involve backend and frontend development tools, server hosting, third-party API integrations, and marketing efforts to promote the app to users and potential sponsors. Additional costs include software licenses, development hardware, and quality assurance testing. These expenses will allow the team to build a platform that meets user expectations and delivers a seamless dining experience.

Major Expense Justification:

- **Server Hosting:** Necessary for storing and managing user data, location tracking, and handling the reward system. High reliability and scalability are essential to ensure the app’s performance as the user base grows.

- **Third-party API Integration:** The app requires location-based services and other APIs to track user visits to restaurants, which will incur integration fees.
- **Software Licenses:** Development software and tools (such as IDEs or prototyping tools) may require licenses, particularly for enhanced functionality or professional versions of tools.
- **Marketing & User Acquisition:** A significant budget is needed to promote the app, raise awareness among potential users, and onboard local restaurants for partnerships.
- **Quality Assurance & Testing:** Resources will be needed to ensure the app functions properly on different platforms and devices, which may involve external testing services.
- **Development Hardware:** This includes computers, mobile devices for testing, and any other necessary equipment to ensure smooth app development.

9.1 PRELIMINARY BUDGET

Item	Description	Estimated Cost
Server Hosting	Cloud hosting for data storage and management	TBD
API Integrations	Third-party services for location tracking, etc.	TBD
Software Licenses	Development tools and software	TBD
Marketing	Advertising, promotions, and user acquisition	TBD
Quality Assurance & Testing	External testing services for app functionality	TBD
Development Hardware	Computers, mobile devices for testing	TBD

9.2 CURRENT & PENDING SUPPORT

Current Support:

- **CSE Department Funding:** A default funding amount provided by the Computer Science and Engineering department for student senior design projects, which will contribute to basic development costs and initial prototyping.

Pending Support:

- **Potential Sponsors:** Local restaurants and dining venues may provide sponsorship in the form of funding or rewards to help support the app's development and promotion.
- **Crowdfunding/Grants:** The team is exploring crowdfunding options and technology grants to supplement the budget. These sources have yet to be secured.The exact amount provided by the department is $800, which serves as the foundational budget for the project.

10. FACILITIES & EQUIPMENT

To successfully develop and test the **Los Tragones/Foodies** mobile app, the project team will utilize a combination of personal and university-provided resources:

Facilities:

- **Computer Science and Engineering Lab:** The team has access to the CSE department lab, which offers computers, reliable internet connectivity, and software tools necessary for development and testing. This facility serves as a backup and collaborative space where the team can work together, conduct meetings, and utilize additional resources if required.

Equipment:

- **Personal Development Computers:** All team members will be using their own laptops and desktops for both backend and frontend development. This allows for a more flexible working environment, enabling team members to work from different locations while maintaining consistent development progress.
- **Mobile Devices:** Testing the app on multiple devices is crucial to ensure compatibility and a smooth user experience across different platforms. The team will use personal smartphones and tablets for this purpose. Additional devices may be borrowed from friends or sourced online if necessary.
- **Server Hosting:** For backend infrastructure, database management, and API integration, the team will use outsourced cloud hosting services. This will support the development and testing phases and provide a scalable environment as the project grows.
- **Software Licenses:** The team will utilize various software tools for development, such as Visual Studio Code for coding, Android Studio for Android app development, and Figma for UI/UX design.
- **Testing and Quality Assurance Tools:** The team will employ tools to test the app's performance and compatibility across different devices and operating systems. These tools will be used as needed to ensure the app meets quality standards.

Additional Requirements:

- **Meeting Rooms:** For team discussions and project planning sessions, the team will reserve meeting rooms in the main library or engineering library. This space will facilitate effective communication and collaboration among team members.

By leveraging personal equipment and university resources, the team aims to efficiently develop and test the app, ensuring it meets technical and user expectations.

11 ASSUMPTIONS

The following list contains critical assumptions related to the implementation and testing of the project.

\begin{itemize}

\item Access to cloud hosting services will be consistent throughout the projects development.

\item All team members will have access to necessary testing devices by the 2nd sprint cycle.

\item Stable API services will be available throughout the projects lifecycle.

\item All team members will be available according to the planned project schedule.

\item Data privacy regulations will remain consistent with current standards.

\end{itemize}

12. CONSTRAINTS

These constraints are outside the team control and must be carefully managed to ensure successful completion of the project within the defined boundaries.

\\

\\

The following list contains key constraints related to the implementation and testing of the\textbf{ Los Tragones/ Foodies} project:

\begin{itemize}

\item Final prototype demonstration must be completed by May 1st, 2025.

\item Total development costs, including server hosting, software licenses, and testing tools, must not exceed the budget of \$800.

\item The team will be using personal computers and have access to university computers only during lab hours.

\item All user data collected, such as location and dining history, must comply with data privacy regulations.

\item The project relies on third-party APIs for location tracking and rewards integration.

\end{itemize}

\\

13 RISKS

The following high-level risk census contains identified project risks with the highest exposure for the Los Tragones/Foodies mobile app. These risks could impact the project's timeline and completion. Mitigation strategies will be addressed in future planning sessions.

Risk Description	**Probability**	**Loss (days)**	**Exposure (days)**
Availability of necessary API for location-based services: The app depends on third-party APIs to fetch and provide location-based services, such as identifying restaurants within a 5-mile radius. If the API is not available or experiences downtime, this could delay development and testing of key features.	0.30	15	4.5
Difficulty in securing restaurant partnerships: The app rewards users with coupons and free meals. If partnerships with restaurants are not secured in a timely manner, the app's rewards system could be delayed.	0.40	20	8.0
Issues with app performance under high user load: If the app experiences an influx of users upon launch,	0.25	18	4.5

this could strain server resources and cause delays in launching the final version of the app. Additional testing and optimization would be required.			
Delay in the development of the rewards tracking system: The feature that tracks users' visits and calculates reward points might encounter technical challenges, especially if unexpected bugs arise in tracking systems or user data storage.	0.35	14	4.9
Unforeseen bugs during beta testing: While testing is a standard part of development, there could be major bugs found during the beta testing phase that significantly impact key functionalities like matching users and rewarding points, leading to delays.	0.50	10	5.0

Table 1: Overview of highest exposure project risks

14 DOCUMENT & REPORTING

14.1 MAJOR DOCUMENTATION DELIVERABLES

14.1.1 PROJECT CHARTER

The Project Charter will be maintained and updated at key stages of the project lifecycle. Updates will occur at the end of each sprint to reflect any scope changes, project milestones, or new stakeholder inputs. The initial version of the Project Charter will be delivered by October 21, 2024 (End of Sprint 2). The final version will be delivered by the end of Sprint 4, which concludes on December 02, 2024.

14.1.2 SYSTEM REQUIREMENTS SPECIFICATION

The System Requirements Specification (SRS) will be maintained throughout the project and updated as new features or functionality are added or modified. Updates will occur at the end of each sprint based on user feedback and technical requirements. The initial version will be delivered by September 13, 2024 (Beginning of Sprint 1). The final version will be delivered by November 11, 2024 (End of Sprint 3).

14.1.3 ARCHITECTURAL DESIGN SPECIFICATION

The Architectural Design Specification will evolve as the app’s architecture is refined and adjusted. Updates will occur when significant design changes are implemented, such as changes in the database schema or server architecture. The initial version will be delivered by October 25, 2024 (Beginning of Sprint 3). The final version will be delivered by the end of Sprint 4 on December 02, 2024, prior to final testing and deployment.

14.1.4 DETAILED DESIGN SPECIFICATION

The Detailed Design Specification will be maintained and updated throughout the project to reflect changes in the app's feature-level design, including UI elements, APIs, and system interactions. This document will be updated at the end of each sprint as new features are developed. The initial version will be delivered by November 15, 2024 (Beginning of Sprint 4), with the final version ready for the end of Sprint 4 on December 02, 2024.

14.2 RECURRING SPRINT ITEMS —---

During each sprint, the following documentation will be maintained:

- **Sprint Backlog:** Updated during sprint planning sessions, held on September 13, 2024, October 4, 2024, October 25, 2024, and November 15, 2024.
- **Sprint Review:** To be completed at the end of each sprint, with the next one on September 30, 2024, followed by October 27, 2024, November 11, 2024, and December 02, 2024.
- **Sprint Retrospective:** Documenting lessons learned, this will take place alongside the sprint reviews on the same dates mentioned above.

14.2.1 PRODUCT BACKLOG

Items will be added to the product backlog based on the System Requirements Specification (SRS). Each functional and nonfunctional requirement identified in the SRS will be translated into individual backlog items. Items will be prioritized based on their importance to the core functionality of the app, user feedback, and technical dependencies. The Product Owner will be primarily responsible for prioritizing items, with input from the development team and stakeholders. Prioritization will follow a combination of customer needs and technical feasibility.

Jira will be used to maintain and share the product backlog with team members and stakeholders, ensuring real-time updates and easy tracking of progress. Stakeholders and team members can access Jira to view and comment on the backlog.

14.2.2 SPRINT PLANNING

Sprint planning will be conducted at the start of each sprint, where the development team will collaboratively decide which backlog items will be worked on during that sprint. Based on the course schedule, there will be four sprints:

- Sprint 1: September 13 - September 30, 2024
- Sprint 2: October 04 - October 21, 2024
- Sprint 3: October 25 - November 11, 2024
- Sprint 4: November 15 - December 02, 2024

During each sprint planning session, the Product Owner will propose items from the product backlog for the team to work on, with the team estimating the time and effort required to complete each task. Based on this discussion, the team will agree on the scope for the sprint.

14.2.3 SPRINT GOAL

The Product Owner, with input from the development team, will decide the sprint goal. The sprint goal will align with the overall project objectives and prioritize the most critical functionality required for the app to be operational by the end of the course.

To involve the customer in this process, periodic meetings or feedback sessions will be scheduled at the beginning and end of each sprint. Customer input will influence both the sprint goal and the prioritization of tasks. For example, the customer may prioritize user matchmaking features over the rewards system based on real-world use case feedback.

14.2.4 SPRINT BACKLOG

The Product Owner will select which product backlog items are transferred into the sprint backlog. During sprint planning, the team will discuss these items and ensure they are achievable within the sprint timeframe.

The sprint backlog will be maintained using Jira or a similar collaboration tool, where a scrum board will visualize the status of each task (e.g., "To Do," "In Progress," and "Done"). The sprint backlog will be updated daily during the stand-up meetings to ensure progress is tracked, and any impediments are identified and addressed promptly.

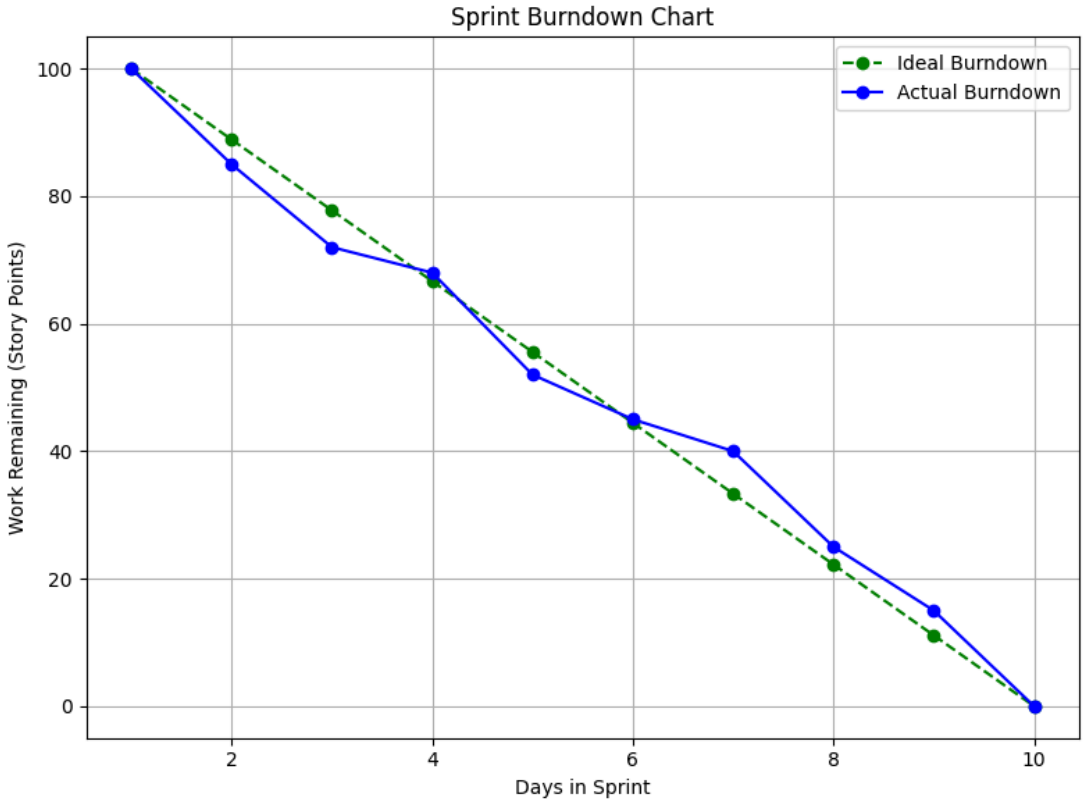
14.2.5 TASK BREAKDOWN

Individual tasks from the sprint backlog will either be claimed voluntarily by team members or assigned by the Product Owner based on each team member’s skills and workload. Tasks will be broken down into smaller, manageable subtasks where necessary to allow for better distribution of work and easier tracking.

Jira will also be used to document the time spent on each task. Team members will log their time within the system, providing a clear record of effort expended on each task. This will also help in tracking the overall progress of the sprint.

14.2.6 SPRINT BURN DOWN CHARTS

The Scrum Master will be responsible for generating the burn down charts for each sprint. These charts will be updated daily based on task completion data recorded in Jira. The total amount of effort expended by each individual team member will be accessed through their logged hours and task progress in the system.



14.2.7 SPRINT RETROSPECTIVE

The sprint retrospective will take place immediately after the sprint review meeting for each sprint. The team will reflect on what went well, what didn't, and how to improve moving forward. Discussions will be collaborative, with each team member contributing. Key points and actionable insights will be documented in a shared team document. The sprint retrospective document will be finalized and submitted within 48 hours after the meeting, outlining improvements for the next sprint.

14.2.8 INDIVIDUAL STATUS REPORTS

Each team member will submit a weekly status report. These reports will include completed tasks, challenges encountered, time spent, and plans for the upcoming week. The reports will also track progress toward individual and team goals. Status reports will be submitted through the project management tool (e.g., Jira or Trello) by the end of the workweek, before the sprint review meeting.

14.2.9 ENGINEERING NOTEBOOKS

Each team member will update their engineering notebook at the end of each workday. At a minimum, two pages should be completed per week. Each entry will document technical progress, challenges, solutions, and reflections. Notebooks will be reviewed during the sprint

retrospective. Accountability will be maintained through peer review, with a designated team member signing off as a "witness" for each notebook entry at the end of each sprint.

14.3 CLOSEOUT MATERIALS

14.3.1 SYSTEM PROTOTYPE

The final system prototype for Los Tragones/Foodies will include a fully functional app that allows users to find others within a 5-mile radius, track visited places, and redeem rewards points for coupons or free meals. The prototype will be demonstrated in the final sprint, with a Prototype Acceptance Test (PAT) conducted with the customer during the Sprint 4 review. No off-site demonstrations are planned.

14.3.2 PROJECT POSTER

The project poster will include an overview of the app, key features, user flows, and technical architecture. It will also include screenshots of the app, user feedback, and project results. The poster will be 36x48 inches and will be delivered one week before the final demonstration.

14.3.3 WEB PAGE

A simple project web page will be developed and made accessible to the public. The page will include an overview of the app, screenshots, demo video, and team member bios. It will be delivered before the final demonstration and maintained throughout the project.

14.3.4 DEMO VIDEO

The demo video will showcase the key features of the Los Tragones/Foodies app, focusing on how users can connect, track visits, and redeem rewards. The video will be approximately 5 minutes long, including a B-reel of user interactions and app performance. A separate video will demonstrate the installation process for app developers.

14.3.5 SOURCE CODE

The source code will be maintained in a Git repository, using GitHub for version control. The customer will be provided with the source code and a compiled binary for deployment. The project will be open-sourced under the MIT license, and the terms will be included in each source file and the main README file.

14.3.6 SOURCE CODE DOCUMENTATION

Doxygen will be used to generate the source code documentation. The final documentation will be delivered in browsable HTML format and include code comments, descriptions of key methods, and usage instructions. It will be provided alongside the source code in the GitHub repository.

14.3.7 HARDWARE SCHEMATICS

As Los Tragones/Foodies is a purely software project, no hardware schematics are required.

14.3.8 CAD FILES

This section is not applicable as the project involves no mechanical or 3D-printed components.

14.3.9 INSTALLATION SCRIPTS

Installation scripts will be provided to automate the deployment of the app's front end and back end. Separate scripts will be created for setting up the database, configuring the app server, and deploying the mobile app to iOS and Android platforms. These scripts will be included in the project's GitHub repository.

14.3.10 USER MANUAL

A digital user manual will be provided, detailing app installation, account setup, navigation, and troubleshooting. The manual will also include a brief FAQ section. A setup video will accompany the manual for users who prefer a visual guide. Both will be delivered with the final version of the app.