App Introduction:

The main problem that this application is aiming to solve is food wastage. Food waste is a significant global problem. Food wastage is an issue that impacts the environment, economy and society at large. Globally, nearly 1.3 billion tons of food is wasted annually, contributing to anywhere between 8-10% of greenhouse gas emissions. A significant contributor to this waste is the restaurant industry, where unsold food is discarded at the end of the day despite still being fresh and edible. In the United States alone an estimated 30-40% of the food supply is wasted. The waste comes at a high cost having a huge impact on food insecurity. 1 in 9 people worldwide face hunger or food insurecity. In the United States, many college students struggle to afford healthy meals. Reducing food waste could help close the gap between food surplus and food scarcity. Given the urgency to address this problem to reduce the environmental, economic and social issues, creating a solution for this problem is critical. Leftover food presents a unique opportunity. Not only can restaurants reduce waste and environmental damage, but they can also contribute to social good by making food more accessible for those who do not have access to it and cannot afford it. The demand for affordable food is higher than ever, particularly among students and families in the lower-income brackets. Validating the importance of this problem, the United States has set ambitious goals to cut food waste in half by 2030. Second Serve is positioned to contribute to this goal by providing an eco-friendly, economical solution that benefits both restaurants and consumers.

Second Serve is a mobile application that connects restaurants with excess food to consumers seeking affordable meals. The application allows restaurants to list food

items that they can no longer sell at regular prices due to time constraints (nearing the end of the day or closing hours), but are still perfectly safe to eat. These items are offered to users at discounted rates, significantly reducing the amount of food waste while also offering users low-cost, fresh food options. This would work by a restaurant posting available items in real-time through a user-friendly interface, specifying the food, price, pick-up time and location. The user can search for nearby deals by using geolocation, view the list of surplus items, and reserve a meal. This app would include an option for users to reserve their meal and pay at the restaurant ensuring a seamless transaction between both parties.

Ultimately, Second Serve is an environmentally responsible and cost-effective way to enjoy delicious meals while actively participating in reducing food waste. Whether the user is a college student on a budget or someone conscious about their spending, Second Serve offers a convenient solution for everyone. The best part is, it is low-cost meals for budget-conscious consumers. Reduction of food waste, supporting sustainability goals and extremely convenient as it is easy to browse, reserve and pay all through one app.

There are many individuals that will use Second Serve. The first being College Students on college campuses. College students often struggle with the high cost of food, and the access to fresh meals that are discounted can significantly benefit them. They are also more likely to embrace sustainable practices, making them a key demographic for Second Serve. People facing food insecurity need affordable meal options. This app will allow students to get healthy meals for a reduced cost. Additionally, it will help restaurant owners looking to minimize their waste and improve

their environmental practices. We plan on interacting with these user groups throughout the development process to collect feedback, test new features and ensure that the app is meeting their needs effectively.

Competition:

The main competitor to Second Serve is Too Good to Go. Upon evaluating the app, we noted several smart design decisions. First, the app lets you view participating restaurants in your city without the need to create an account or give any personal information. This is good because any friction in the first few minutes of the experience is likely to make uncommitted users give up. A user is only required to create an account right before checkout. In addition, more minor ergonomic enhancements are employed to reduce friction in the minutes leading up to checkout. Location options are presented intuitively in a series of horizontal scrollable lists, similar to Netflix, with titles such as “recommended for you” and “save before it’s too late”. When a user first opens the app, they are met with a carousel that gives them information, including what the app is about and what benefits it provides.

In addition to the design decisions listed above, there were several drawbacks we found in our testing. First of all, Too Good to Go has a very limited selection of locations in Madison. When we tested, there were only three. Additionally, it was difficult to decide which location to choose due to the primitive rating system, which only displayed an aggregate star rating, along with some upsides to each location. It would have been nice to see some written reviews, including downsides. Finally, while there was a convenient location picker to get started, it would only let us choose our city.

Further adjustments had to be made by dragging the pin closer to our location. It seems that the designers expect their users to be less location-sensitive, which would be something Second Serve would need to avoid given its target audience of college students, who often bike or walk.

In order to differentiate ourselves from Too Good to Go, we plan to keep Second Serve local to the area in and around campus. Additionally, we plan to restrict access to only UW-Madison students to reduce the supply versus demand imbalance and integrate more closely with various university technologies.

Mobile Innovation:

The most innovative aspect of Second Serve from a mobile app perspective is its integration of location-based services and real-time notifications. These features are specifically for mobile apps rather than a regular desktop application. The location based service allows users to share their location so that the app can use GPS to display nearby participating restaurants offering discounted leftover foods. This real time proximity based service uses the mobile devices' GPS capabilities. The push notification feature allows the app to send instant alerts to students when restaurants have food items available. This ensures that students are informed right away without having to constantly check the app. This is crucial for time sensitive deals like leftover foods. The app could also verify a user's status as an enrolled UW-Madison student by checking the campus ID barcode on the back of their Wiscard paired with the UW-Madison Person API. Lastly, the app is designed for on the go use. It allows users to browse and purchase food quickly from their phones.

Main Modules:

The Second Serve mobile application consists of several key modules that ensure smooth operation and scalability. On the client side, the user interface module does the design and interaction, so users will be able to browse restaurants, food items, and make reservations. The location services module uses GPS to display nearby participating restaurants, while a push notification module sends alerts about available deals real time. The app will also have a payment module integrated for transactions. Users can search and filter options through a dedicated search module. On the server side, a restaurant management module will enable restaurants to list and manage food items, while a user management and authentication module will handle user accounts, preferences, and order history. The database stores and syncs data between users and restaurants, and the notifications and messaging module supports communication and push alerts. The camera will be used to scan Wiscard barcodes for identity verification. Geolocation will sort restaurant listings based on user location. Together, these modules ensure a user-friendly, real-time experience for both consumers and restaurants.