

# Project Proposal for Sharing Leftover Food

**Team Number:** 02

**Team Members:** Ishita Gupta SN99817512, Jayati Gupta SN34268201, Dhruv Bihani SN93378453, Manjot Singh SN99067191, Nick Chen SN80611197

## 1 Overview

The MVP for this project would be creating a prototype where users can create a post for the leftover food they have. The users can also have a look at what food items are available and can get it by following these few steps. The food donor can choose a drop-off location out of the many locations set up by the administrators. Both the food donor and the food receivers can use a map to see where the drop-off/pick-up location is. They can chat with each other to decide a new location that is more convenient for them if needed. The app will also send out a notification to users closer to the pick-up/drop-off time to remind them.

This software connects individuals who expect to have excess food and individuals who may be eager to receive this food free of charge.

This software aims to help alleviate food insecurity for individuals, who may not have the ability to afford food, by providing them with free, high quality food resources. Additionally, it aims to assist in reducing food waste and offer individuals an opportunity to donate their excess or leftover food. It also encourages a sense of altruism and sharing within the community. This approach helps minimize wastage of food and fosters new connections founded in feelings of gratitude and generosity.

What sets us apart is our multi-faceted approach and inclusiveness while making our users feel as protected as possible. Our rating system allows food receivers and givers to feel reassured before they go to drop off and pick up their food. Our emergency features also help with this. Our value proposition lies in the simplicity of our app.

We share surplus, extra food for free of charge to the needy who cannot afford/avail clean, healthy food otherwise, to ensure everyone has access to nutritious food while minimizing food waste. We encourage altruism and positive feelings of gratitude. The app is open to all and promotes feelings of good faith and oneness.

The app stands apart from others of its kind as it has easy access to healthy, home-cooked food, is accessible and inclusive to all users regardless of any disabilities or assistive technology they might use and provides tailored sharing and requesting options to accommodate users with food restrictions and/or preferences.

## 1.1 Envisioned Usage

This application serves as a streamlined food sharing platform serving both the food donors and seekers. On the app, the food donors have the ability to list food items they wish to donate, providing important facts such as ingredients and allergens. They can also manage these listings and communicate directly with interested food seekers. On the other side, food seekers can browse the available listings, apply specific dietary filters such as “dairy-free” or “gluten-free,” and claim the food they want through a simple “Get” button. For any additional questions or the need to negotiate a new pickup location, in-app messaging is available to both parties. The food donor can contact the seeker if their order is ready to collect at a pickup location and answer additional questions about the food item. The final MVP includes a scrollable list of food items complete with necessary information, specialized dietary filters, a straightforward claiming process, and in-app messaging for effective communication between the two user groups.

### *User Scenario 1 (Donor):*

Lisa, a working professional, threw a barbeque for her colleagues. She finds that she has an excess of food left over. She decides to open up the Sharing Leftover Food app and create a posting to donate her excess food for someone who may really need it. While creating the posting, she uploads a picture of the food with a brief description along with an allergen and ingredient list. She also includes an expiration date along with a tag describing that it is “Halal” and “Gluten-Free”. Furthermore, she sets up a pickup location from the predefined list of common public locations to drop off the food. She is able to communicate with the seeker about any last-minute clarifications they might have about the food posting using the in-app messaging system. Lisa is pleased that her food did not go to waste!

### *User Scenario 2 (Seeker):*

Alice is a university student who recently lost her job and is struggling to make ends meet. She realizes that she will not be able to afford dinner tonight so she opens the Sharing Leftover Food app to view available food postings nearby. She uses the “Filter by Tag” feature to find food postings that are exclusively “Halal” and “Gluten-Free”. She discovers a posting that she is really interested in and reserves it. She agrees to the pickup location as set by the donor and goes to pick the food up. She is satisfied that she will have a meal tonight!

## 2 Major Milestones

Deadline	Deliverable
Term 1 week 9: Mini Presentation	<p>We aim to be done with the following:</p> <ol style="list-style-type: none"> <li>1. App prototype on Figma with completed design</li> <li>2. Database setup and integration : Using the firebase realtime database and integrating it in flutter .</li> </ol>
Term 1 week 13: Design submission	<ol style="list-style-type: none"> <li>1. Viewing food items in a scrollable list view with pictures and a brief description - These will be all the food posts created by the food donors.</li> <li>2. Main food item post page with ingredients and other details - When a user clicks on a food item listed , they can view a detailed description of the ingredients used , ratings etc.</li> <li>3. Creating a post for food item - Whenever a food donor has to give food , they can create a post about it</li> <li>4. Past orders page - Users can have a look at their previous orders.</li> <li>5. ER diagram creation</li> <li>6. Settings page layout (font size, color) - Users can edit the font size , colour of text , background colour etc from this page.</li> <li>7. User profile page with ratings and reviews - A photo of the user along with their demographic information and how much rating do they have will be shown on this page.</li> <li>8. UI design interaction flow - A chart about how the users can interact with the system.</li> <li>9. Sign-up/login/logout feature setup - user authentication</li> <li>10. System architecture design documentation - what architecture are we using for the project</li> </ol>
Term 2 week 4: Peer Testing	<ol style="list-style-type: none"> <li>1. Implementing tags while creating posts: describe the food with tags like 'lactose-free', 'halal' etc.</li> <li>2. Searching by tags and text</li> <li>3. Filtering by tags and text: filter search results</li> <li>4. Filtering by pickup location</li> <li>5. Setting up a review system for all users: users can leave feedback and reviews for food donors and collectors.</li> <li>6. Setting a pick up location for the food</li> <li>7. User can edit their profiles anytime they want: change contact information, passwords, etc.</li> <li>8. Allow users to reserve or schedule food items for pickup</li> <li>9. Implement a troubleshooting page to answer frequently asked questions from users.</li> <li>10. Rewards or badges for frequent donors</li> </ol>
Term 2 week 8: Peer Testing	<ol style="list-style-type: none"> <li>1. Messaging between the donors and receivers: We want to let users decide on their own location and override the designated location if needed</li> <li>2. Predefined templates for frequent user interactions: This will allow users to quickly set-up a new location or time by using a</li> </ol>

<p>Term 2 week 13: Final project submission</p>	<p>predefined conversation starter where they can plug in the details required</p> <ol style="list-style-type: none"> <li>3. Blocking feature: We want to allow users to block users they find inappropriate or want to stop interacting with</li> <li>4. Adding settings page functionality - increase font size, change background colour</li> <li>5. Integrating a map that tell you the way to pick up or drop off location</li> <li>6. Accessibility - voice input, screen reader compatibility,</li> <li>7. Add alt text requirements by posters and high contrast mode (text and other UI elements are more distinguishable)</li> <li>8. Option to offer utensils/containers, provided they're natural/biodegradable/good for the planet</li> <li>9. Tutorial for first-time users</li> <li>10. Add notifications to alert users when pickup time is approaching</li> </ol> <ol style="list-style-type: none"> <li>1. Emergency button - SOS if something happens at pickup location that will alert authorities</li> <li>2. Implement camera functionality so donors can upload photos of dropped off food.</li> <li>3. Share food item/profile via a shareable link from the app.</li> <li>4. Admin testing: testing the functionality and admin authorizations work as intended.</li> <li>5. User testing : testing the functionality and authorizations work as intended from perspective of the users (both donors and collectors of food).</li> </ol>
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Table 1: Proposed Project Milestones: Provide any explanation necessary to make your milestones understandable. These milestones need to make sense of the number of people in your team and the number of weeks between each milestone.

### 3 Technology Stack

**Software Platforms - iOS and Android:** These are the two most popular operating systems for smartphones so we target the majority of people. In reality, users are more comfortable with

Android and iOS, utilizing these platforms will create a better experience for the user which will ensure that we can deliver the best possible product for a wider range of people.

**Front-End/User Interface - Flutter:** for cross-platform compatibility so we can target more users and be more efficient by developing from a single codebase. Flutter also has a better interoperability with Firebase.

**Data Storage - Firebase** - Real time database Firebase is easily accessible and can hold large data sets. It is easy to integrate it in Flutter and interacting with the realtime database is much more efficient and easy. Also, the user's data will be secure and they will have privacy.

**Programming Language - Dart** - Dart is the language which the Flutter framework also uses. The ease of use and modern syntax makes the language easy to learn and powerful to use for the team on both frontend and backend development.

**API - Google Maps API** - We will integrate the Google Maps API into our app which will help us to set the pick-up and drop-off locations for the food. It will enhance user experience as they can get the directions to where exactly drop the food or pick the food from. Google Maps also is a well established platform that has far more details than other platforms so integrating Google Maps will provide a better experience for the user.

## 4 Teamwork Distribution and Anticipated Hurdles

Category	Dhruv Bihani S1	Ishita Gupta S2	Jayati Gupta S3	Manjot Singh S4	Nick Chen S5
Experience	Created an android application called UBC ALERT APP which notifies users of any event happening (good or bad) around campus.	Created an android application within a team that kept track of medicines users had to take using Android Studio.	Created an Android application last year with a team that was a rating system for the on-campus dining hall - Pritchard and another one which alerts users to on-campus events.	Developed a python library working for the Indian government, conducted research with one of my former instructors (Python).	Created both iOS and Android applications to track user's trips and transit behaviour for the civil engineering research group at UBC using Xcode and Android Studio.

Good At	I am good at project planning, teamwork skills , communication , backend development	I'm good at project planning, project documentation, coding, and design.	I'm good at project planning, communication, presentation, and setting up frameworks for code.	I think I'm good at coding, planning the project, and organizing code.	I'm good at organizing tasks, project planning, troubleshooting coding problems and front-end development/design.
Expect to Learn	I expect to learn about the front end of the system and using flutter for large projects. I also expect to learn more about how to efficiently use GitHub for project collaboration.	I expect to learn about the tech stack we're using including Firebase and Flutter as I do not have any previous experience with them.	I expect to learn more about databases and how to set up Flutter applications as I've never created a cross-platform app before.	I expect to learn more about collaboration with tools like Notion, Figma, GitHub, and also more about databases.	I expect to learn more about back-end developments and configuring databases. Flutter will be an interesting framework I have not experienced before so I'm interested to learn more on Flutter.

Table 2: Team Experience, Expertise, and Areas of Learning

Category of Work/Features	Dhruv Bihani	Ishita Gupta	Jayati Gupta	Manjot Singh	Nick Chen
Project Management: Kanban board	✓	✓	✓	✓	✓
Technical Direction: Time Estimation, Making Programming Choices			✓		✓
Technical Help: Finding Technical Solutions	✓	✓		✓	
Troubleshooting: The Go-To When Others Are Stuck	✓	✓	✓	✓	✓
System Architecture Design	✓			✓	
User Interface Design		✓	✓		✓
App prototype on Figma with completed design	✓	✓	✓	✓	✓
Database setup and integration	✓			✓	
Viewing food items in a scrollable list view with pictures and a brief description	✓				

Main food item post page with ingredients and other details			✓		
Creating a post for a food item		✓			
Past orders page					✓
ER diagram creation		✓			
Settings page layout (font size, color)	✓				
User profile page with ratings and reviews				✓	
UI design interaction flow			✓		
Sign-up/login/logout feature setup				✓	
System architecture design documentation					✓
Implementing tags while creating posts	✓				
Searching by tags and text					✓
Filtering by tags and text				✓	
Filtering by pickup location		✓			
Setting up a review system for all users				✓	
Setting a pick-up location for the food		✓			
Profile editing			✓		
Allow users to reserve or schedule food items for pickup					✓
Implement a troubleshooting page to answer frequently asked questions from users	✓				
Rewards or badges for frequent donors			✓		
Messaging between donors and receivers				✓	

Pre-defined templates for frequent user interactions			✓		
Blocking feature				✓	
Adding settings page functionality - increase font size, change background color	✓				
Integrating a map that tells you the way to the pick-up or drop-off location					✓
Accessibility - voice input, screen reader compatibility		✓			
Add alt-text requirements by posters and high-contrast mode (text and other UI elements are more distinguishable)			✓		
Option to offer utensils/containers, provided they're natural/ biodegradable/ good for the planet	✓				
Tutorial for first-time users		✓			
Add notifications to alert users when the pickup time is approaching					✓
Emergency button - SOS if something happens at the pickup location that will alert authorities				✓	
Implement camera functionality so donors can upload photos of dropped-off food					✓
Share food item/profile via a shareable link from the app		✓			
Admin testing	✓				
User testing			✓		
Presentation Preparation	✓	✓		✓	
Design Video Creation		✓			✓
Design Video Editing	✓		✓		
Design Report		✓		✓	✓
Final Video Creation		✓	✓		



Final Video Editing	✓		✓		✓
Final Team Report	✓	✓	✓	✓	✓
Final Individual Report	✓	✓	✓	✓	✓

### **Expected Areas of Contributions:**

In our process, we have allocated responsibilities and contributions thoughtfully depending on multiple factors and fairness. We valued individual strengths: we assigned technical features typically to a maximum of 2 individuals for heavier features and to 1 person for everything else. We based this on their skill set and also areas where they want to improve or learn more. This ensures that tasks are delegated to people who can make the biggest contribution which increases efficiency and quality of work. For team documentation and things like team logs and project records, we distributed the tasks equally among all team members. We wanted to make sure everyone had a hand in making the documentation as no one was particularly inclined to doing it and this felt like the fairest approach. We also let team members select tasks based on preference as we believe this will empower everyone to contribute to areas that they feel most enthusiastic about.