University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: ___1_____

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Group Number: __99_____

Name	Student Number	CS Alias (Userid)	Preferred E-mail Address
Alex Kwok	70386099		a.kwok0191@gmail.com
Byeori Kim	74612821		bk.byeori.kim@gmail.com
Jun Lee	21913603		Junemessi040714@gmail.com

By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

2. Project Description

a) The domain of this application is food donation and redistribution management, which focuses on reducing food waste and ensuring surplus food is efficiently donated to those in need. The application operates within the intersection of food logistics, nonprofit management, and environmental sustainability. It aims to connect donors (e.g., restaurants, grocery stores, individuals) with recipient organizations (e.g., shelters, food banks) to streamline the process of donating, tracking, and distributing excess food. This system ensures that food is safely and quickly redirected from donors to recipients, reducing waste and providing resources to underprivileged communities.

b) The database models several key aspects of the food donation and redistribution process. It tracks:

- Food Donors – Entities that offer food donations, such as restaurants, grocery stores, or individuals. The database stores information on who the donors are, the types of food they donate, and their donation history.

- Recipient Organizations (Charities) – Nonprofit organizations like food banks and shelters that receive food donations. The system keeps records of these organizations, the types of food they require, and their ability to accept donations.

- Food Donation Events – The system captures details about specific donation events, such as the date, location, and items donated during each event. This includes tracking temporary donations like food drives or one-off charity events.

- Food Items – The specific food items being donated, their quantity, expiration date, type (e.g., perishable, non-perishable), and condition. This helps track inventory and ensures proper handling of different types of food based on their perishability.

- Volunteers and Workers – To facilitate donations and deliveries, the database tracks volunteers involved in pickup and delivery, helping to organize logistics to ensure the timely redistribution of food.

- Redistribution – The database tracks how donations are redistributed to recipients, ensuring that food is allocated efficiently based on the needs of recipient organizations.

By modelling these aspects, the database addresses real-world challenges such as matching donors with recipients based on location, managing the quantity and quality of donations, and ensuring that perishable items are delivered promptly. For instance, if a restaurant donates a large amount of fresh produce, the system can quickly identify which nearby organizations are capable of accepting and distributing that specific donation before it spoils. This application can

be applied in food rescue operations, charities, or environmental sustainability initiatives aimed at minimizing food waste and feeding those in need.

3. Database Specifications

This database models the operations of a food bank and tracks information on food donors, the food they donate, food inventory levels, and food recipients. The following practical use cases are as follows:

- Determine food inventory levels sorted by food type and expiry date to aid in the decision-making on the amount of food recipients can receive
- Determine food donation frequency of donors and tracks the type of food they donate
- Determine the demographic of recipients relying on food charities
- Determine the type and amount of food donated to recipients

4. Description of the Application Platform

a) Our project will use MySQL as the database system, allowing for flexibility in managing and optimizing the database structure.

b) For the expected application technology stack, we will use JavaScript for the front end, PHP for the back end, and MySQL as the relational database. This combination will enable efficient interaction with the database while building a user-friendly interface for the application.

Food Charities Operation - ER Diagram