
LETTER OF ENGAGEMENT

TO: COMMUNITY FOOD PANTRY
FROM: TREY VAN ERSVELDE
SUBJECT: TRANSACTIONAL DATABASE FOR COMMUNITY FOOD PANTRY
DATE: SEPTEMBER 11, 2025

The Business

The Community Food Pantry is a non-profit organization that accepts donated food from individuals, businesses, and community partners, and distributes those items to households experiencing food insecurity. The pantry operates with the support of staff and volunteers who receive, organize, and issue food to eligible recipients in the community.

The proposed transactional database will support the pantry by recording donations as they arrive, tracking inventory levels by category and unit of measure, and ensuring food safety through expiration date management. It will also record distributions to recipients, capturing which items were provided and when. This database will give pantry staff up-to-date visibility into donor activity, inventory on hand, items nearing expiration, and the service history of each recipient. By providing accurate and timely data, the system will allow the pantry to recognize donors, plan procurement drives, minimize food waste, and ensure fair and equitable distribution of resources.

Database Description

We propose a normalized, transactional database to support day-to-day pantry operations. The core entities are:

- Donor
- Donation
- Item
- Category
- Unit
- DonationItem
- Recipient
- Distribution
- DistributionItem

Business Rules:

- A Donor can make zero or more Donations, but a Donation must be made by exactly one Donor.

- A Donation must contain one or more DonationItems, and a DonationItem must belong to exactly one Donation.
- An Item can appear on zero or more DonationItems, but every DonationItem must reference exactly one Item.
- A Recipient can have zero or more Distributions, but a Distribution must be for exactly one Recipient.
- A Distribution must contain one or more DistributionItems, and a DistributionItem must belong to exactly one Distribution.
- An Item can appear on zero or more DistributionItems, but every DistributionItem must reference exactly one Item.
- A Category can have zero or more Items; each Item must have exactly one Category.
- A Unit can have zero or more Items; each Item must have exactly one Unit.

Queries

The user shall have multiple queries in the final database to retrieve just-in-time transactional data. Queries will be implemented as stored procedures. Below is a set of sample, recommended queries for the Community Food Pantry database:

- DONATIONS by DONOR Query: This query shows all donations made by a particular donor within a chosen time period. It includes the donation details and the total items received.
Purpose: helps staff review a donor's activity for thank-you letters and intake auditing.
- DISTRIBUTIONS by RECIPIENT Query: This query lists all distributions made to a particular recipient within a chosen time period. It includes the items and quantities that were given out.
Purpose: supports case review and verifies the level of assistance a household has received.
- INVENTORY ON HAND by ITEM Query: This query calculates the current stock level of a selected item by subtracting total distributions from total donations. It also shows the earliest expiration date for that item.
Purpose: helps pantry staff know what is available and ensures efficient stock management.
- ITEMS NEAR EXPIRY Query: This query identifies item batches that will expire soon, grouped by item and listed in order of the earliest expiration date.
Purpose: supports first-in, first-out rotation and reduces waste.
- INSERT DONATION Query: This is a transactional query that allows the user to add a new donation into the system along with the specific items and quantities that were donated.
Purpose: ensures donations are recorded accurately and completely in real time.
- INSERT DISTRIBUTION Query: This is a transactional query that allows the user to record a new distribution made to a recipient, including the specific items and quantities that were issued.

Purpose: ensures distributions are tracked properly and prevents giving out more than what is available in inventory.

Reports

The Community Food Pantry will use a variety of reports to gather relevant information that will assist staff in making sound operational decisions. The reports will be programmed as stored procedures (queries) and then presented in a visually clear way. The primary reports to date will include:

- Donor Activity Report: This report shows the number of donations received from each donor within a selected time period. It will allow pantry management to recognize active donors, plan appreciation efforts, and identify those who may need outreach.
- Recipient Service Report: This report lists the distributions made to each recipient household, including the number of visits and the total items received. It will help the pantry track service levels and ensure fairness in the distribution of resources.
- Inventory Status Report: This report displays current inventory levels for all items, grouped by category and unit of measure. It highlights items that are low in stock or approaching expiration. This will allow the pantry to plan food drives, request targeted donations, and minimize waste.

Qualifying Assumptions

In developing this database design, the following assumptions were made:

- Donors may be individuals or organizations. If the donor is an individual, FirstName and LastName are required. If the donor is an organization, OrganizationName is required.
- Each Recipient record represents the head of household, and HouseholdSize indicates the total number of people in that household.
- Every Donation and Distribution must include at least one item; donations or distributions with zero items are not possible.
- Address data is captured as Address, City, State, and Zip. A more detailed breakdown (apartment number, county) is not required.
- Staff and volunteers who receive donations or fulfill distributions are recorded as text values in the ReceivedBy and FulfilledBy fields. A separate staff/volunteer table is not maintained in this phase.
- Quantities of items are assumed to be entered as whole numbers only.

The Schedule of Deliverables

| Deliverable | Due Date | Completed |
|-------------|----------|-----------|
|-------------|----------|-----------|

| | | |
|----------------------------------|-------------|-------------|
| Letter of Engagement | 9/14 | 9/12 |
| Physical Database Implementation | 10/5 | |
| Stored Procedures | 11/2 | |
| Final Operational Database | 12/3 | |

Acceptance of Letter of Engagement

All involved parties agree to the guidelines and milestones set forth by this letter of engagement.

Community Food Pantry
Client

September 12, 2025
Date

Trey Van Ersvelde
System Consultant

September 12, 2025
Date

APPENDIX A – CONCEPTUAL DESIGN (ERD)

