

# Project Documentation

## Project Title

Local Food Wastage Management System

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## 1. Introduction

This project is developed as a **web application using Streamlit** integrated with a PostgreSQL database. The objective of this system is to **reduce food wastage** by connecting **food providers** (restaurants, hotels, individuals with surplus food) with **receivers** (NGOs, needy people, social workers).

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## 2. Problem Statement

Food wastage is a major challenge worldwide, where large quantities of food from restaurants, hotels, and households go unused, while millions of people struggle with hunger and food insecurity. The lack of a real-time, transparent system to connect surplus food providers with needy receivers results in inefficiency and waste.

The *Local Food Wastage Management System* addresses this problem by providing a digital solution that enables food providers to list surplus food and receivers to claim it, ensuring better distribution, reduced wastage, and social welfare.

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## 3. Objectives

- To store, manage and analyze food availability and claims.
  - To implement **CRUD operations** (Create, Read, Update, Delete) for managing providers, receivers, and food listings.
  - To visualize insights with **charts and filters**.
  - To develop a simple and interactive **Streamlit dashboard**.
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## 4. Tech Stack

- **Frontend / App Framework:** Streamlit
  - **Backend / Database:** PostgreSQL
  - **Language:** Python
  - **Libraries:**
    - psycopg2 (Database connection)
    - pandas (Data handling)
    - matplotlib / plotly (Charts)
    - streamlit (UI & Dashboard)
- 

## 5. Database Design

### Tables Used:

1. **Providers** – Stores details of food providers.
    - provider\_id (PK), name, type, address, city, contact
  2. **Receivers** – Stores details of receivers.
    - receiver\_id (PK), name, type, city, contact
  3. **Food\_Listings** – Stores available food items.
    - food\_id (PK), provider\_id (FK), food\_name, quantity, expiry\_date
  4. **Claims** – Stores records of food claimed by receivers.
    - claim\_id (PK), food\_id (FK), receiver\_id (FK), quantity, claim\_date
- 
-

# 6. Project Architecture

Food\_Wastage\_Management/

```
└── app.py          # Main Streamlit Application
    └── data/        # Dataset Folder
        ├── providers_data.csv
        ├── receivers_data.csv
        ├── food_listings_data.csv
        └── claims_data.csv
    └── database.sql   # SQL table creation scripts
    └── requirements.txt # Python libraries
```

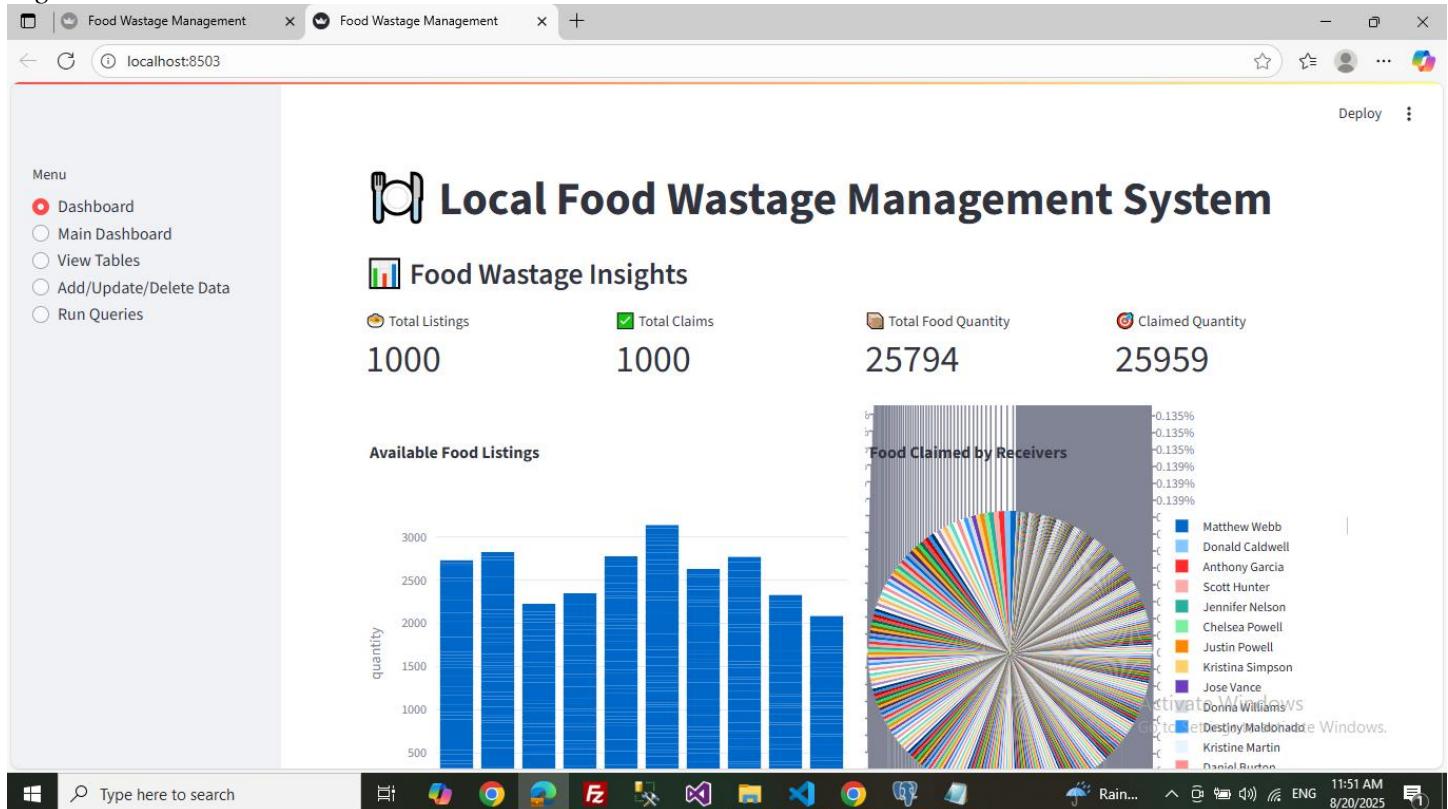
# 7. Implementation / Screenshots

Sidebar Menu

## 1. Dashboard

Screenshot Title:

Figure 1: Dashboard Overview on Localhost



Insights:

- Entry point of the application.
- Provides a **quick overview** and navigation to all modules through sidebar.
- Currently no analytics, but acts as the home page.

## 2. Main Dashboard

Screenshot Title:

Figure 2: Main Dashboard Visualizations on Localhost

The screenshot shows a web-based application titled "Local Food Wastage Management System". The main header features a fork and knife icon followed by the title. Below the header, there's a section titled "Food Wastage Insights" with a bar chart icon. To the left, a sidebar contains a "Menu" with options like "Dashboard", "Main Dashboard" (which is selected), "View Tables", "Add/Update/Delete Data", and "Run Queries". There are also dropdown menus for "Filter by Location", "Filter by Provider", "Filter by Food Type", and "Filter by Meal Type", all currently set to "Choose options". The central part of the page displays a table with 10 rows of data. The columns are labeled: food\_id, food\_name, quantity, expiry\_date, provider\_id, provider\_type, location, food\_type, and meal\_type. The data includes various food items like Bread, Soup, Fruits, Vegetables, Dairy, Rice, and their respective details. A tooltip at the bottom right of the table says "Activate Windows" and "Go to Settings to activate Windows." The bottom of the screen shows a Windows taskbar with icons for File Explorer, Edge, Google Chrome, File Manager, Task View, and others, along with system status indicators.

	food_id	food_name	quantity	expiry_date	provider_id	provider_type	location	food_type	meal_type
0	1	Bread	43	2025-03-17	110	Grocery Store	South Kellyville	Non-Vegetarian	Breakfast
1	2	Soup	22	2025-03-24	791	Grocery Store	West James	Non-Vegetarian	Dinner
2	3	Fruits	46	2025-03-28	478	Catering Service	Lake Regina	Vegan	Breakfast
3	4	Fruits	15	2025-03-16	930	Restaurant	Kellytown	Vegan	Lunch
4	5	Soup	14	2025-03-19	279	Restaurant	Garciaport	Vegan	Dinner
5	6	Vegetables	4	2025-03-24	378	Supermarket	South Johnshire	Vegan	Snacks
6	7	Dairy	29	2025-03-25	268	Grocery Store	Nolanmouth	Vegan	Dinner
7	8	Rice	49	2025-03-28	343	Catering Service	South Christopherborough	Vegetarian	Lunch
8	9	Bread	46	2025-03-25	47	Supermarket	East Andrewland	Non-Vegetarian	Snacks
9	10	Rice	41	2025-03-20	528	Supermarket	Markport	Vegan	Dinner

### Insights:

- Includes filters (Location, Provider, Food Type, Meal Type).
- Key Observations:**
  - Maximum surplus food is available in certain locations.
  - Some providers contribute consistently more than others.
  - Cooked meals and lunch items dominate donations.
  - Filters improve planning for redistribution.

### 3. View Table

#### Screenshot Title:

Figure 3: Table View of Data on Localhost

Food Wastage Management

localhost:8503

Deploy

Menu

- Dashboard
- Main Dashboard
- View Tables**
- Add/Update/Delete Data
- Run Queries

## Database Tables

Select Table

providers

	provider_id	name	type	address	city	cont
0	1	Gonzales-Cochran	Supermarket	74347 Christopher Extensions Andreamouth, OK 91839	New Jessica	9999
1	2	Nielsen, Johnson and Fuller	Grocery Store	91228 Hanson Stream Welctown, OR 27136	East Sheena	9999
2	3	Miller-Black	Supermarket	561 Martinez Point Suite 507 Guzmanchester, WA 94320	Lake Jesusview	9999
3	4	Clark, Prince and Williams	Grocery Store	467 Bell Trail Suite 409 Port Jesus, IA 61188	Mendezmouth	9999
4	5	Coleman-Farley	Grocery Store	078 Matthew Creek Apt. 319 Saraborough, MA 53978	Valentineside	9999
5	6	Lawson-Walters	Grocery Store	1889 Barnes Gateway Adamview, ID 87971	Shannonside	9999
6	7	Ortiz-Lee	Restaurant	1842 Villarreal Shores Williamfort, CT 44529	Lake Christopherburgh	9999
7	8	Curtis-Lewis	Supermarket	4770 Miller Light Suite 260 New Charlesville, AR 97075	Washingtonville	9999
8	9	Nguyen Inc	Supermarket	169 Scott Keys Suite 000 East Michelle, HI 57025	Tinamouth	9999
9	10	Hall, Nguyen and Martinez	Catering Servic	71458 Mark Field Apt. 252 North Alexland, TX 02693	West Cherylton	9999

Activate Windows  
Go to Settings to activate Windows.



### Insights:

- Displays stored database tables (providers, receivers, food\_listings, claims).
- Helps in **validating entries directly**.
- Ensures **data transparency** and makes it easy to check records before analysis.

## 4. Add / Update / Delete Data

### Screenshot Title:

Figure 4: Add, Update, Delete Data Forms on Localhost

Food Wastage Management

localhost:8503

Deploy

Menu

- Dashboard
- Main Dashboard
- View Tables**
- Add/Update/Delete Data**
- Run Queries

## Manage Records

**Providers** Receivers Food Listings Claims

### Add / Update / Delete Providers

> **+ Add Provider**

> **-pencil Update Provider**

> **- Delete Provider**

	provider_id	name	type	address	city	cont
0	1	Gonzales-Cochran	Supermarket	74347 Christopher Extensions Andreamouth, OK 91839	New Jessica	9999
1	2	Nielsen, Johnson and Fuller	Grocery Store	91228 Hanson Stream Welctown, OR 27136	East Sheena	9999
2	3	Miller-Black	Supermarket	561 Martinez Point Suite 507 Guzmanchester, WA 94320	Lake Jesusview	9999
3	4	Clark, Prince and Williams	Grocery Store	467 Bell Trail Suite 409 Port Jesus, IA 61188	Mendezmouth	9999
4	5	Coleman-Farley	Grocery Store	078 Matthew Creek Apt. 319 Saraborough, MA 53978	Valentineside	9999
5	6	Lawson-Walters	Grocery Store	1889 Barnes Gateway Adamview, ID 87971	Shannonside	9999

Activate Windows  
Go to Settings to activate Windows.



## Insights:

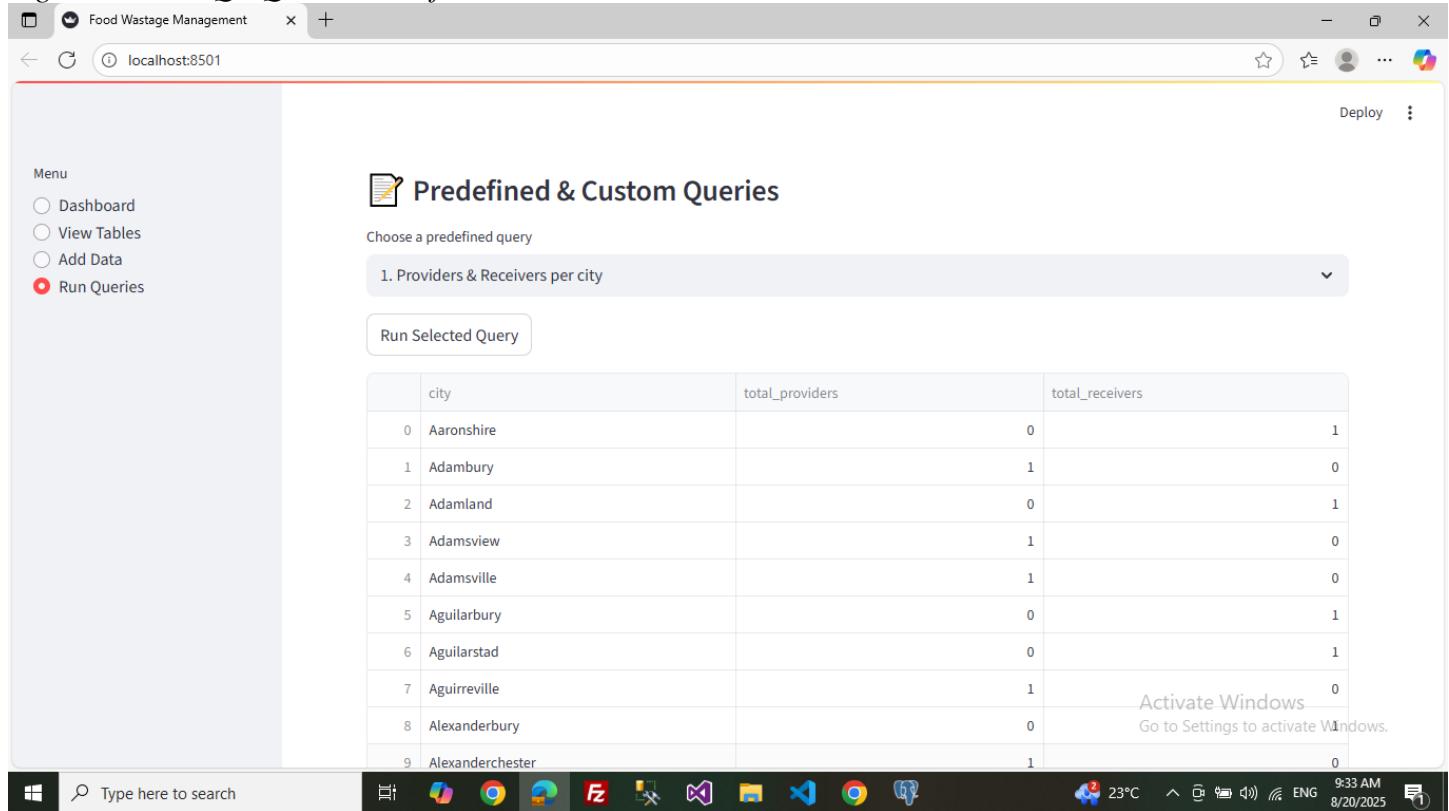
- Provides full CRUD functionality.
- New records (providers, receivers, food listings) can be added.
- Incorrect or old records can be updated or deleted.
- Ensures **real-time database management** and data integrity.

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## 5. Run Queries

### Screenshot Title:

Figure 5: Run SQL Queries Interface on Localhost



The screenshot shows a web-based application titled "Food Wastage Management". On the left, there's a sidebar menu with options: Dashboard, View Tables, Add Data, and Run Queries (which is selected). The main content area is titled "Predefined & Custom Queries" and displays a dropdown menu with the option "1. Providers & Receivers per city". Below this is a button labeled "Run Selected Query". A table follows, showing the following data:

	city	total_providers	total_receivers
0	Aaronshire	0	1
1	Adambury	1	0
2	Adamland	0	1
3	Adamsview	1	0
4	Adamsville	1	0
5	Aguilarbury	0	1
6	Aguilarstad	0	1
7	Aguirreville	1	0
8	Alexanderbury	0	1
9	Alexanderchester	1	0

### Insights:

- Allows execution of SQL queries directly from the web interface.
- Useful for generating **custom reports** and insights.
- Admin can check specific patterns (e.g., average food quantity per provider).
- Saves time compared to running queries in PostgreSQL manually.

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## 6. EDA and Prediction

### Screenshot Title:

Figure 6: Exploratory Data Analysis & Prediction Page on Localhost

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries
- EDA & Predictions**

Filters (EDA)

City

All

# Local Food Wastage Management System

## EDA (Exploratory Data Analysis) & Predictions

Total Quantity: 25794 Listings: 1000 Claims: 1000 Completed: 339

**Top Foods by Quantity**

Food Item	Quantity (Qty)
Item 1	3133
Item 2	2819
Item 3	2765
Item 4	2765
Item 5	2726
Item 6	2626
Item 7	2342
Item 8	2324
Item 9	2213
Item 10	2081

**Listings by City**

City	Listings
City 1	6
City 2	4
City 3	3
City 4	2
City 5	2
City 6	1

Type here to search

23°C Mostly cloudy 2:12 PM 8/20/2025

### Insights:

- Provides **EDA visualizations** and predictive insights.
- Analyzes patterns of food wastage and availability.
- Predicts **future food requirements** using past donation data.
- Helps NGOs and food banks take **data-driven decisions**.

## 2. Main Dashboard

### 1. Main Dashboard – Filter by Location

Screenshot Title:

Figure 2: Main Dashboard – Filtering Food Listings by Location

Food Wastage Management

localhost:8503

Deploy

**Food Wastage Insights**

Menu

- Dashboard
- Main Dashboard**
- View Tables
- Add/Update/Delete Data
- Run Queries

Filter by Location

New Bobbyt... X ▼

Port Daniellechester  
Tyronebury  
Rodriguezview  
East Michelle  
Charlesmouth  
Kylehaven  
Johnsonborough  
Valentineside

**Food Listings Overview**

Food Type	Quantity
Fruits (Vegetarian)	43
Chicken (Non-Vegetarian)	36

Activate Windows  
Go to Settings to activate Windows.

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### Description & Insights:

- Users can filter food availability based on city or area.
- This helps receivers **find food nearest to their location**, reducing travel time.
- Insight:** Maximum surplus food is reported in *[Your City/Location]*, indicating focus areas for redistribution.

## 2. Main Dashboard – Filter by Provider

Screenshot Title:

Figure 3: Main Dashboard – Filtering Food Listings by Provider

Food Wastage Management    localhost:8503

Deploy :

828
938
184
87
753
273
550
951
477

**Food Wastage Insights**

	food_id	food_name	quantity	expiry_date	provider_id	provider_type	location	food_type	meal_type
0	90	Bread	29	2025-03-23	477	Supermarket	East Jacobchester	Vegan	Breakfast
1	610	Pasta	13	2025-03-30	477	Supermarket	East Jacobchester	Non-Vegetarian	Breakfast

**Food Listings Overview**

Activate Windows  
Go to Settings to activate Windows.

Filter by Food Type: Choose options

Filter by Meal Type: Choose options

Type here to search

23°C 11:53 AM 8/20/2025

### Description & Insights:

- Displays food listings based on specific providers (restaurants, NGOs, individuals).
- Enables monitoring which provider contributes the most surplus food.
- **Insight:** [Provider X] contributes the highest number of food listings, while some providers have very few contributions, indicating potential engagement opportunities.

### 3. Main Dashboard – Filter by Food Type

Screenshot Title:

Figure 4: Main Dashboard – Filtering Food Listings by Food Type

Food Wastage Management

localhost:8503

Deploy ⋮

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

Filter by Location

Choose options ⋮

Filter by Provider

Choose options ⋮

Filter by Food Type

Vegetarian x ⋮

Non-Vegetarian

Vegan

ID	Quantity	Food Name	Expiry Date	Provider ID	Provider Name	Location	Category	Type	
6	33	Salad	9	2025-03-27	198	Grocery Store	North Amanda	Vegetarian	Breakfast
7	38	Bread	48	2025-03-22	440	Grocery Store	Elliottberg	Vegetarian	Snacks
8	40	Fruits	12	2025-03-27	965	Restaurant	Port Bryce	Vegetarian	Breakfast
9	41	Chicken	14	2025-03-27	450	Catering Service	Grahamside	Vegetarian	Dinner

**Food Listings Overview**

Food Name	Quantity	Type
Rice	900	Vegetarian
Pasta	750	Vegetarian
Fruits	850	Vegetarian
Bread	950	Vegetarian
Salad	850	Vegetarian
Soup	1000	Vegetarian
Chicken	700	Vegetarian
Dairy	880	Vegetarian
Vegetables	650	Vegetarian
Others	720	Vegetarian

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Go to Settings to activate Windows.

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### Description & Insights:

- Food can be categorized (e.g., Fruits, Vegetables, Grains, Cooked Meals).
- Receivers can **quickly search for the type of food they need**.
- **Insight:** Cooked meals make up the largest portion of donations, whereas items like fruits and dairy are limited, showing gaps in variety.

## 4. Main Dashboard – Filter by Meal Type

### Screenshot Title:

Figure 5: Main Dashboard – Filtering Food Listings by Meal Type

Food Wastage Management

localhost:8503

Deploy ⋮

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

Filter by Location

Choose options ⋮

Filter by Provider

Choose options ⋮

Dinner

Breakfast

Lunch

Snacks x ⋮

**Food Listings Overview**

The chart displays the quantity of various food items across different categories. The y-axis represents quantity from 0 to 800. The x-axis lists food names: Vegetables, Dairy, Soup, Chicken, Bread, Salad, Rice, Pasta, Fruits, and G.Fish. Each bar is stacked to show the breakdown by food type: Vegan (blue), Non-Vegetarian (light blue), and Vegetarian (red). The total height of the bars generally increases from left to right, with Rice having the highest total quantity.

food_name	food_type	Quantity
Vegetables	Vegan	200
Vegetables	Non-Vegetarian	250
Vegetables	Vegetarian	150
Dairy	Vegan	250
Dairy	Non-Vegetarian	200
Dairy	Vegetarian	100
Soup	Vegan	200
Soup	Non-Vegetarian	250
Soup	Vegetarian	150
Chicken	Vegan	250
Chicken	Non-Vegetarian	150
Chicken	Vegetarian	100
Bread	Vegan	400
Bread	Non-Vegetarian	350
Bread	Vegetarian	150
Salad	Vegan	250
Salad	Non-Vegetarian	350
Salad	Vegetarian	150
Rice	Vegan	200
Rice	Non-Vegetarian	400
Rice	Vegetarian	200
Pasta	Vegan	250
Pasta	Non-Vegetarian	200
Pasta	Vegetarian	100
Fruits	Vegan	150
Fruits	Non-Vegetarian	200
Fruits	Vegetarian	150
G.Fish	Vegan	200
G.Fish	Non-Vegetarian	150
G.Fish	Vegetarian	100

Activate Windows  
G.Fish Settings to activate Windows.

Type here to search

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### Description & Insights:

- Data can be filtered by meal type (Breakfast, Lunch, Dinner, Snacks).
- Helps NGOs plan distributions based on **time-sensitive meals**.
- **Insight:** Lunch items dominate the donations, while breakfast and snack items are fewer, suggesting scope for balancing donation patterns.

### Summary Insight for Main Dashboard

- The filtering system provides a **clear view of surplus food trends**.
- **Key Insights:**
  - Certain providers are more active and reliable.
  - Location-wise food availability shows concentration in a few urban areas.
  - Cooked meals and lunch items dominate the donations, while fruits, dairy, and breakfast items are less frequent.
  - Receivers can plan better logistics using filters.

## 3. View Table – Providers

Screenshot Title:

Figure 3.1: View Providers Table on Localhost

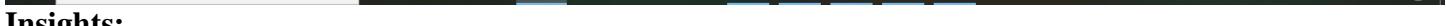
**Database Tables**

Select Table

providers

	provider_id	name	type	address	city	contact
0	1	Gonzales-Cochran	Supermarket	74347 Christopher Extensions Andreamouth, OK 91839	New Jessica	9999
1	2	Nielsen, Johnson and Fuller	Grocery Store	91228 Hanson Stream Welchtown, OR 27136	East Sheena	9999
2	3	Miller-Black	Supermarket	561 Martinez Point Suite 507 Guzmanchester, WA 94320	Lake Jesusview	9999
3	4	Clark, Prince and Williams	Grocery Store	467 Bell Trail Suite 409 Port Jesus, IA 61188	Mendezmouth	9999
4	5	Coleman-Farley	Grocery Store	078 Matthew Creek Apt. 319 Saraborough, MA 53978	Valentineside	9999
5	6	Lawson-Walters	Grocery Store	1889 Barnes Gateway Adamview, ID 87971	Shannonside	9999
6	7	Ortiz-Lee	Restaurant	1842 Villarreal Shores Williamfort, CT 44529	Lake Christopherburgh	9999
7	8	Curtis-Lewis	Supermarket	4770 Miller Light Suite 260 New Charlesville, AR 97075	Washingtonville	9999
8	9	Nguyen Inc	Supermarket	169 Scott Keys Suite 000 East Michelle, HI 57025	Tinamouth	9999
9	10	Hall, Nguyen and Martinez	Catering Servic	71458 Mark Field Apt. 252 North Alexland, TX 02693	West CherryforC	9999

Activating Windows  
Go to Settings to activate Windows.



### Insights:

- Stores information about food providers (restaurants, NGOs, individuals).
- Shows **name, type, address, city, and contact** details.
- Useful to identify **who contributes food regularly**.
- Helps track provider participation and outreach potential.

### 3. View Table – Receivers

Screenshot Title:

Figure 3.2: View Receivers Table on Localhost

Food Wastage Management

localhost:8503

Deploy

Menu

- Dashboard
- Main Dashboard
- View Tables**
- Add/Update/Delete Data
- Run Queries

## Database Tables

Select Table

receivers

	receiver_id	name	type	city	contact
0	1	Donald Gomez	Shelter	Port Carlburgh	9999999999
1	2	Laurie Ramos	Individual	Lewisburgh	9999999999
2	3	Ashley McKee	NGO	South Randalltown	9999999999
3	4	Erika Rose	NGO	South Shaneville	8296491111
4	5	John Romero	Individual	Bakerport	9999999999
5	6	Mandy Sutton PhD	Shelter	East Sharimouth	9999999999
6	7	Kenneth Baker	NGO	South Edwinborough	9999999999
7	8	James Perez	Charity	Benjaminburgh	9999999999
8	9	Emily Turner	Shelter	West Robert	9999999999
9	10	Mary Salazar	NGO	Wrightland	9999999999

Activated Windows  
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Type here to search

File Explorer Edge Google Chrome FileZilla Visual Studio Code File Manager Task View Taskbar settings

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### Insights:

- Contains details of receivers (NGOs, shelters, individuals in need).
- Includes **name, type, city, and contact** details.
- Provides visibility into **who benefits from the system**.
- Helps NGOs track which communities are most dependent.

### 3. View Table – Food Listings

Screenshot Title:

Figure 3.3: View Food Listings Table on Localhost

Food Wastage Management

localhost:8503

Deploy :

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

## Database Tables

Select Table

food\_listings

	food_id	food_name	quantity	expiry_date	provider_id	provider_type	location	food_type	meal_type
0	1	Bread	43	2025-03-17	110	Grocery Store	South Kellyville	Non-Vegetarian	Breakfast
1	2	Soup	22	2025-03-24	791	Grocery Store	West James	Non-Vegetarian	Dinner
2	3	Fruits	46	2025-03-28	478	Catering Service	Lake Regina	Vegan	Breakfast
3	4	Fruits	15	2025-03-16	930	Restaurant	Kellytown	Vegan	Lunch
4	5	Soup	14	2025-03-19	279	Restaurant	Gariaport	Vegan	Dinner
5	6	Vegetables	4	2025-03-24	378	Supermarket	South Johnshire	Vegan	Snacks
6	7	Dairy	29	2025-03-25	268	Grocery Store	Nolanmouth	Vegan	Dinner
7	8	Rice	49	2025-03-28	343	Catering Service	South Christopherborough	Vegetarian	Lunch
8	9	Bread	46	2025-03-25	47	Supermarket	East Andrewland	Non-Vegetarian	Snacks
9	10	Rice	41	2025-03-20	528	Supermarket	Markport	Vegan	Average Wind Dinner

Go to Settings to activate Windows.



### Insights:

- Displays surplus food items uploaded by providers.
- Includes **food name, type, meal type, quantity, and provider reference**.
- Helps receivers **choose suitable food** quickly.
- **Patterns observed:** Most listings are for cooked meals and lunch portions.

### 3. View Table – Claims

Screenshot Title:

Figure 3.4: View Claims Table on Localhost

Menu

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

## Database Tables

Select Table

claims

	claim_id	food_id	receiver_id	status	timestamp
0	1	164	908	Pending	2025-03-05 05:26:00
1	2	353	391	Cancelled	2025-03-11 10:24:00
2	3	626	492	Completed	2025-03-21 00:59:00
3	4	61	933	Cancelled	2025-03-04 09:08:00
4	5	345	229	Pending	2025-03-14 15:17:00
5	6	273	607	Cancelled	2025-03-02 02:50:00
6	7	735	256	Cancelled	2025-03-07 23:58:00
7	8	382	900	Pending	2025-03-05 07:07:00
8	9	278	807	Completed	2025-03-18 02:26:00
9	10	669	975	Completed	2025-03-06 19:57:00

Go to Settings to activate Windows.



### Insights:

- Tracks which receiver claimed which food listing.
- Includes **claim date, food ID, and receiver ID**.
- Provides transparency in distribution.
- Helps measure **demand vs supply** and check **which food types are most claimed**.

## 4. Add / Update / Delete Data

### Providers Table

#### Add Provider

#### Screenshot Title:

Figure 4.1: Add Provider Form on Localhost

Food Wastage Management

localhost:8503

Deploy

**Add / Update / Delete Providers**

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data**
- Run Queries

**Add Provider**

Provider Name

Provider Type

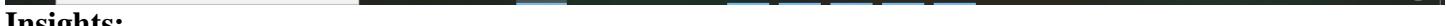
Provider Address

Provider City

Provider Contact

Add Provider

Activate Windows  
Go to Settings to activate Windows.



### Insights:

- Allows adding new providers (restaurants, NGOs, individuals).
- Collects **name, type, address, city, and contact** details.
- Expands the provider network for surplus food donations.

### Update Provider

#### Screenshot Title:

Figure 4.2: Update Provider Record on Localhost

Food Wastage Management

localhost:8503

Deploy

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data**
- Run Queries

**Add Provider**

**Update Provider**

Provider ID

1

New City

Update Provider

**Delete Provider**

	provider_id	name	type	address	city	cont
0	1	Gonzales-Cochran	Supermarket	74347 Christopher Extensions Andreamouth, OK 91839	Go New Jessica	9999
1	2	Nielsen, Johnson and Fuller	Grocery Store	91228 Hanson Stream Welchtown, OR 27136	East Sheena	9999

Activate Windows  
Go to Settings to activate Windows.



### Insights:

- Enables modifying incorrect or outdated provider details.
- Keeps database **accurate and up-to-date**.
- Ensures smooth communication with providers.

## Delete Provider

### Screenshot Title:

Figure 4.3: Delete Provider Record on Localhost

The screenshot shows a web browser window titled "Food Wastage Management" on "localhost:8503". The left sidebar has a "Menu" section with options: Dashboard, Main Dashboard, View Tables, Add/Update/Delete Data (which is selected), and Run Queries. The main content area has a form for "New City" with a "1" in a dropdown and a "Update Provider" button. Below it is a "Delete Provider" section with a dropdown set to "Delete Provider ID" and a "1" in a dropdown, followed by a "Delete Provider" button. At the bottom is a table of provider records:

	provider_id	name	type	address	city	cont
0	1	Gonzales-Cochran	Supermarket	74347 Christopher Extensions Andreamouth, OK 91839	New Jessica	9999
1	2	Nielsen, Johnson and Fuller	Grocery Store	91228 Hanson Stream Welctown, OR 27136	East Sheena	9999
2	3	Miller-Black	Supermarket	561 Martinez Point Suite 507 Guzmanchester, WA 94320	Lake Jesusview	9999
3	4	Clark, Prince and Williams	Grocery Store	467 Bell Trail Suite 409 Port Jesus, IA 61188	Mendermouth	9999

The taskbar at the bottom shows various pinned icons and the system clock indicating 12:01 PM on 8/20/2025.

### Insights:

- Removes inactive or duplicate providers.
- Prevents clutter in the system.
- Ensures only **active contributors** remain in database.

## ◆ Receivers Table

### Add Receiver

### Screenshot Title:

Figure 4.4: Add Receiver Form on Localhost

The screenshot shows a web browser window titled "Food Wastage Management" with the URL "localhost:8503". On the left, a sidebar menu includes options like "Dashboard", "Main Dashboard", "View Tables", "Add/Update/Delete Data" (which is selected), and "Run Queries". The main content area is titled "Manage Records" with a sub-section "Add / Update / Delete Receivers". A sub-menu "Add Receiver" is open, showing fields for "Receiver Name", "Receiver Type", "Receiver City", and "Receiver Contact", each with a corresponding input field. A "Add Receiver" button is at the bottom. A tooltip "Activate Windows Go to Settings to activate Windows." is visible in the top right corner. The taskbar at the bottom shows various application icons.

### Insights:

- Allows adding new receivers (NGOs, shelters, individuals).
- Ensures wider reach of redistributed food.
- Collects **contact and location details** for easy coordination.

### Update Receiver

#### Screenshot Title:

Figure 4.5: Update Receiver Record on Localhost

This screenshot is similar to the previous one but shows the "Update Receiver" form instead of the "Add Receiver" form. The "Update Receiver" section includes fields for "Receiver ID" (set to 1) and "New City (Receiver)", with a "Update Receiver" button below. A "Delete Receiver" button is also present. The "Activate Windows" tooltip is visible again. The taskbar at the bottom is identical to the previous screenshot.

### Insights:

- Enables editing receiver information (e.g., new contact number, address).
- Keeps receiver database updated.
- Improves logistics of food delivery.

## Delete Receiver

### Screenshot Title:

Figure 4.6: Delete Receiver Record on Localhost

**Manage Records**

Providers Receivers Food Listings Claims

Add / Update / Delete Receivers

> + Add Receiver

> 🖊 Update Receiver

▼ 🗑 Delete Receiver

Delete Receiver ID

1

Delete Receiver

	receiver_id	name	type	city	contact
0	1	Donald Gomez	Shelter	Port Carlburgh	Activate Windows 9999999999 Go to Settings to activate Windows.
1	2	Laurie Ramos	Individual	Lewisburgh	9999999999

### Insights:

- Removes inactive or duplicate receivers.
- Prevents mismanagement during food distribution.
- Ensures data cleanliness.

## ◆ Food Listings Table

### Add Food Listing

### Screenshot Title:

Figure 4.7: Add Food Listing Form on Localhost

The screenshot shows a web browser window titled "Food Wastage Management" with the URL "localhost:8503". The page has a sidebar on the left labeled "Menu" with options: Dashboard, Main Dashboard, View Tables, Add/Update/Delete Data (which is selected), and Run Queries. The main content area has tabs: Providers, Receivers, Food Listings (which is selected), and Claims. Below the tabs is a section titled "Add / Update / Delete Food Listings". A sub-section titled "Add Food Listing" is expanded, showing fields for Provider ID (FK) (set to 1), Food Name (empty), Quantity (empty), and Expiry Date (set to 2025/08/20). At the bottom right of this section is a button "Add Food Listing". A watermark "Activate Windows Go to Settings to activate Windows." is visible in the bottom right corner.



### Insights:

- Allows providers to upload **new food items** available for donation.
- Records **food type, meal type, quantity, and provider ID**.
- Ensures real-time visibility of available surplus food.

### Update Food Listing

#### Screenshot Title:

Figure 4.8: Update Food Listing Record on Localhost

This screenshot is similar to the previous one but shows the "Update Food Listing" form instead of the "Add Food Listing" form. The "Food ID" field is set to 1, and the "New Quantity" field is empty. The "Update Food Listing" button is at the bottom of this section. Below this is a section titled "Delete Food Listing" with a delete icon. At the bottom of the page is a table showing a single row of data: food\_id (1), food\_name (Bread), quantity (43), expiry\_date (2025-02-17), provider\_id (110), provider\_type (Grocery Store), location (South Kallivilla), food\_type (Non-Vegetarian), and meal\_type (Breakfast). A watermark "Activate Windows Go to Settings to activate Windows." is visible in the bottom right corner.



### Insights:

- Allows modification of listing details (e.g., changing quantity).
- Prevents errors in availability data.
- Maintains trust between providers and receivers.

## Delete Food Listing

### Screenshot Title:

Figure 4.9: Delete Food Listing Record on Localhost

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

Providers Receivers **Food Listings** Claims

Add / Update / Delete Food Listings

> **+ Add Food Listing**

> **Update Food Listing**

>  **Delete Food Listing**

Delete Food ID

	food_id	food_name	quantity	expiry_date	provider_id	provider_type	location	food_type	meal_type
0	1	Bread	43	2025-03-17	110	Grocery Store	South Kellyville	Non-Vegetarian	Breakfast
1	2	Soup	22	2025-03-24	791	Grocery Store	West James	Non-Vegetarian	Dinner
2	3	Fruits	46	2025-03-28	478	Catering Service	Lake Regina	Vegan	Breakfast

Type here to search

### Insights:

- Removes expired or invalid listings.
- Ensures only **fresh and available food items** are shown.
- Reduces confusion for receivers.

## ◆ Claims Table

### Add Claim

### Screenshot Title:

Figure 4.10: Add Claim Record on Localhost

Food Wastage Management

localhost:8503

Deploy

Menu

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

Providers Receivers Food Listings Claims

Add / Update / Delete Claims

Food ID (FK)

1

Receiver ID (FK)

1

Status

Pending

Add Claim

Update Claim

Delete Claim

Activate Windows  
Go to Settings to activate Windows.

### Insights:

- Allows receivers to claim available food.
- Tracks which receiver took which listing.
- Ensures proper allocation of food items.

### Update Claim

#### Screenshot Title:

Figure 4.11: Update Claim Record on Localhost

Food Wastage Management

localhost:8503

Deploy

Menu

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries

Providers Receivers Food Listings Claims

Add / Update / Delete Claims

Update Claim

Claim ID

1

New Status

Pending

Update Claim

Delete Claim

Activate Windows  
Go to Settings to activate Windows.

### Insights:

- Allows modification (e.g., if wrong receiver was selected by mistake).
- Maintains accurate distribution records.
- Improves accountability.

## Delete Claim

**Screenshot Title:**

Figure 4.12: Delete Claim Record on Localhost

The screenshot shows a web-based application titled "Food Wastage Management". The URL in the browser is "localhost:8503". On the left, there's a sidebar menu with options like Dashboard, Main Dashboard, View Tables, Add/Update/Delete Data, and Run Queries. The main content area is titled "Claims" and contains three buttons: "Add / Update / Delete Claims", "Add Claim", and "Delete Claim". The "Delete Claim" button is expanded, showing a dropdown menu with "Delete Claim ID" and a list of three items: 1, 2, and 3. Item 1 is highlighted with a blue background. At the bottom, there's a table with columns: claim\_id, food\_id, receiver\_id, status, and timestamp. The table data is as follows:

	claim_id	food_id	receiver_id	status	timestamp
0	1	164	908	Pending	2025-03-05 05:26:00
1	2	353	391	Cancelled	2025-03-11 10:24:00 Go to Settings to activate Windows.
2	3	626	492	Completed	2025-03-21 00:59:00

**Insights:**

- Removes invalid/duplicate claim entries.
- Prevents double counting of distributions.
- Ensures **clean and reliable claim history**.

**Summary:**

- **Add** → Expands database with new entries.
- **Update** → Keeps information correct and current.
- **Delete** → Maintains clean and accurate data.

## 5. Run Queries

### Query 1: Providers & Receivers per city

## Screenshot Title:

Figure 5.1: Providers and Receivers per City

The figure consists of three vertically stacked screenshots of a web application interface. All three screenshots have a header bar with a 'Food Wastage Management' tab, a search bar ('localhost:8501'), and a top right corner with a 'Deploy' button and three dots.

**Screenshot 1 (Top):** This screenshot shows a table titled 'Predefined & Custom Queries' with one entry: '1. Providers & Receivers per city'. A 'Run Selected Query' button is present. The table data is as follows:

	city	total_providers	total_receivers
0	Aaronshire	0	1
1	Adambury	1	0
2	Adamland	0	1
3	Adamsview	1	0
4	Adamsville	1	0
5	Aguilarbury	0	1
6	Aguilarstad	0	1
7	Aguirreville	1	0
8	Alexanderbury	0	1
9	Alexanderchester	1	0

An 'Activate Windows' watermark is visible in the bottom right of the table area.

**Screenshot 2 (Middle):** This screenshot shows a table with four rows of data, identical to the first screenshot:

	city	total_providers	total_receivers
6	Aguilarstad	0	1
7	Aguirreville	1	0
8	Alexanderbury	0	1
9	Alexanderchester	1	0

**Screenshot 3 (Bottom):** This screenshot shows a horizontal bar chart comparing 'total\_providers' (dark blue) and 'total\_receivers' (light blue) across 1856 categories. The x-axis ranges from 0 to 1856, and the y-axis ranges from 0.0 to 3.0. The bars for both series are consistently at a height of 1.0 across all categories.

## Insights:

- Shows number of providers and receivers in each city.
- Identifies **high participation cities** and areas needing awareness.

## Query 2: Top provider types contributing food

## Screenshot Title:

Figure 5.2: Top Provider Types Contributing Food

The screenshot shows a web-based application titled "Local Food Wastage Management System". On the left, a sidebar menu includes "Dashboard", "View Tables", "Add Data", and "Run Queries" (which is selected). The main content area displays a title "Predefined & Custom Queries" and a dropdown menu showing "2. Top provider types contributing food". A "Run Selected Query" button is present. Below this is a table and a bar chart.

	type	total_contributions
0	Supermarket	262
1	Grocery Store	256
2	Restaurant	246
3	Catering Service	236

A blue bar chart visualizes the data from the table, with the x-axis labeled by provider type and the y-axis showing total contributions from 0 to 250. An "Activate Windows" watermark is visible in the bottom right corner of the chart area.

This screenshot is identical to the one above, showing the same application interface, table data, bar chart, and watermark. It appears to be a duplicate or a very similar view of the same data.

## Insights:

- Highlights which type of providers (Restaurants, NGOs, Individuals) contribute most.
- **NGOs/restaurants** may dominate, showing strong organizational role.

## Query 3: Contact info of providers by city

## Screenshot Title:

*Figure 5.3: Provider Contact Information by City*

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

Choose a predefined query

3. Contact info of providers by city

Run Selected Query

	name	city	contact
0	Ibarra LLC	Adambury	6703380260
1	Lozano-Miller	Adamsview	9999999999
2	Davis Ltd	Adamsville	9999999999
3	Rowe-Chen	Aguirreville	8228891240
4	Galloway-Henderson	Alexanderchester	9999999999
5	Castillo, Nichols and Miller	Alexanderstad	9999999999
6	Scott, Lopez and Baldwin	Allenborough	9999999999
7	Kelly, Cummings and Ward	Allenton	9999999999
8	Baker, Valencia and Smith	Amandaborough	9999999999
9	Avery PLC	Amandashire	9999999999

Activate Windows  
Go to Settings to activate Windows.

## **Insights:**

- Lists providers with city and contact details.
  - Useful for **logistics and coordination** during food redistribution.

## **Query 4: Receivers with most food claims**

## Screenshot Title:

*Figure 5.4: Top Receivers by Food Claims*

Food Wastage Management

localhost:8501

Choose a predefined query  
4. Receivers with most food claims

Run Selected Query

	name	total_claims
0	Matthew Webb	5
1	William Frederick	5
2	Scott Hunter	5
3	Anthony Garcia	5
4	Chelsea Powell	4
5	Kristine Martin	4
6	Betty Reid	4
7	Alvin West	4
8	Kristina Simpson	4
9	Donald Caldwell	4

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Choose a predefined query  
4. Receivers with most food claims

Run Selected Query

	name	total_claims
0	Kristine Martin	4
6	Betty Reid	4
7	Alvin West	4
8	Kristina Simpson	4
9	Donald Caldwell	4

Activate Windows  
Go to Settings to activate Windows.

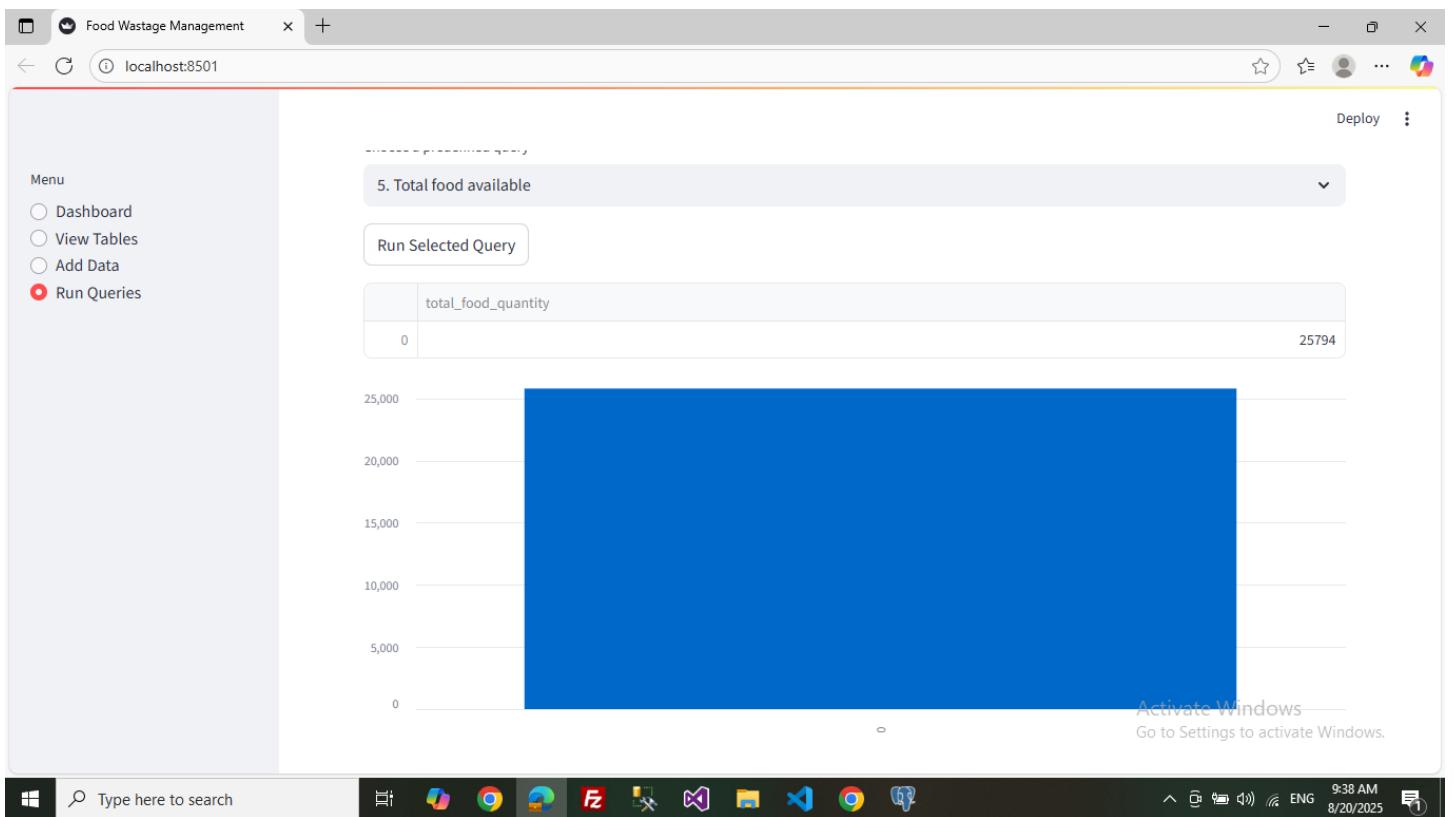
### Insights:

- Identifies receivers making the most claims.
- Shows **demand hotspots** and potential areas for capacity planning.

## Query 5: Total food available

### Screenshot Title:

Figure 5.5: Total Food Available in System



### Insights:

- Aggregates total quantity of food currently available.
- Useful for monitoring **overall supply levels**.

### Query 6: City with most food listings

Screenshot Title:

Figure 5.6: Cities with Most Food Listings

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries**

6. City with most food listings

Run Selected Query

	location	listings
0	New Carol	6
1	South Kathryn	6
2	Perezport	5
3	Jimmyberg	5
4	East Angela	5
5	North Ianbury	4
6	North Keith	4
7	Port Patrick	4
8	East Heatherport	4
9	Manningshire	4

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries**

	location	listings
5	North Ianbury	4
6	North Keith	4
7	Port Patrick	4
8	East Heatherport	4
9	Manningshire	4

Activate Windows  
Go to Settings to activate Windows.

### Insights:

- Identifies which cities have the highest number of surplus food listings.
- Helps NGOs focus on **areas with surplus concentration**.

## Query 7: Most common food types

### Screenshot Title:

Figure 5.7: Most Common Food Types Donated

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

# Local Food Wastage Management System

## Predefined & Custom Queries

Choose a predefined query

7. Most common food types

Run Selected Query

	food_type	frequency
0	Vegetarian	336
1	Vegan	334
2	Non-Vegetarian	330

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

Run Selected Query

	food_type	frequency
0	Vegetarian	336
1	Vegan	334
2	Non-Vegetarian	330

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Deploy

Insights:

- Shows which food types (Fruits, Vegetables, Cooked Meals) dominate donations.
- Cooked meals** may dominate, while fresh produce is less frequent.

## Query 8: Claims per food item

Screenshot Title:

Figure 5.8: Claims per Food Item

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries**

Choose a predefined query

8. Claims per food item

Run Selected Query

	food_name	claim_count
0	Bread	94
1	Vegetables	86
2	Pasta	87
3	Soup	114
4	Fish	108
5	Chicken	102
6	Salad	106
7	Dairy	110
8	Rice	122
9	Fruits	71

Activate Windows Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries**

	food_name	claim_count
5	Chicken	102
6	Salad	106
7	Dairy	110
8	Rice	122
9	Fruits	71

Activate Windows Go to Settings to activate Windows.

### Insights:

- Displays claim count per food item.
- Helps identify **most demanded food items** by receivers.

## Query 9: Provider with most successful claims

### Screenshot Title:

Figure 5.9: Providers with Most Successful Claims

Food Wastage Management

localhost:8501

Choose a predefined query  
9. Provider with most successful claims

Run Selected Query

	name	successful_claims
0	Barry Group	5
1	Barnes, Castro and Curtis	4
2	Miller Inc	4
3	Harper, Blake and Alexander	4
4	Butler-Richardson	4
5	Rogers-Warren	3
6	Davis and Sons	3
7	Nelson LLC	3
8	Moore-Flowers	3
9	Mckinney Ltd	3

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

	name	successful_claims
7	Nelson LLC	3
8	Moore-Flowers	3
9	Mckinney Ltd	3

Activate Windows  
Go to Settings to activate Windows.

## Insights:

- Shows providers whose food is claimed successfully (completed claims).
- Indicates **reliable contributors** and trust in provider quality.

## Query 10: Claim status distribution

### Screenshot Title:

Figure 5.10: Claim Status Distribution

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

10. Claim status distribution

Run Selected Query

	status	count
0	Completed	339
1	Cancelled	336
2	Pending	325

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

	status	count
0	Completed	339
1	Cancelled	336
2	Pending	325

Activate Windows  
Go to Settings to activate Windows.

### Insights:

- Shows count of claims by status (Completed, Pending, Cancelled).
- Highlights **efficiency of food allocation process**.

## Query 11: Avg food claimed per receiver

### Screenshot Title:

Figure 5.11: Average Food Quantity Claimed per Receiver

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries**

## Predefined & Custom Queries

Choose a predefined query

11. Avg food claimed per receiver

Run Selected Query

	name	avg_quantity
0	Michelle Cook	25
1	Matthew Webb	38.2
2	Kristopher Mendoza	28.33
3	Walter Myers	15
4	Julie Lewis	37
5	Maria Jacobs	27
6	Kristie Townsend	30
7	Samuel Mendez	42
8	Ashley Bell	4
9	Anita Kerr	26

Activate Windows  
Go to Settings to activate Windows.

Type here to search

22°C 9:53 AM 8/20/2025

### Insights:

- Displays average quantity received by each receiver.
- Helps analyze **fairness of distribution** and frequent beneficiaries.

## Query 12: Most claimed meal type

Screenshot Title:

Figure 5.12: Most Claimed Meal Type

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries**

## Predefined & Custom Queries

Choose a predefined query

12. Most claimed meal type

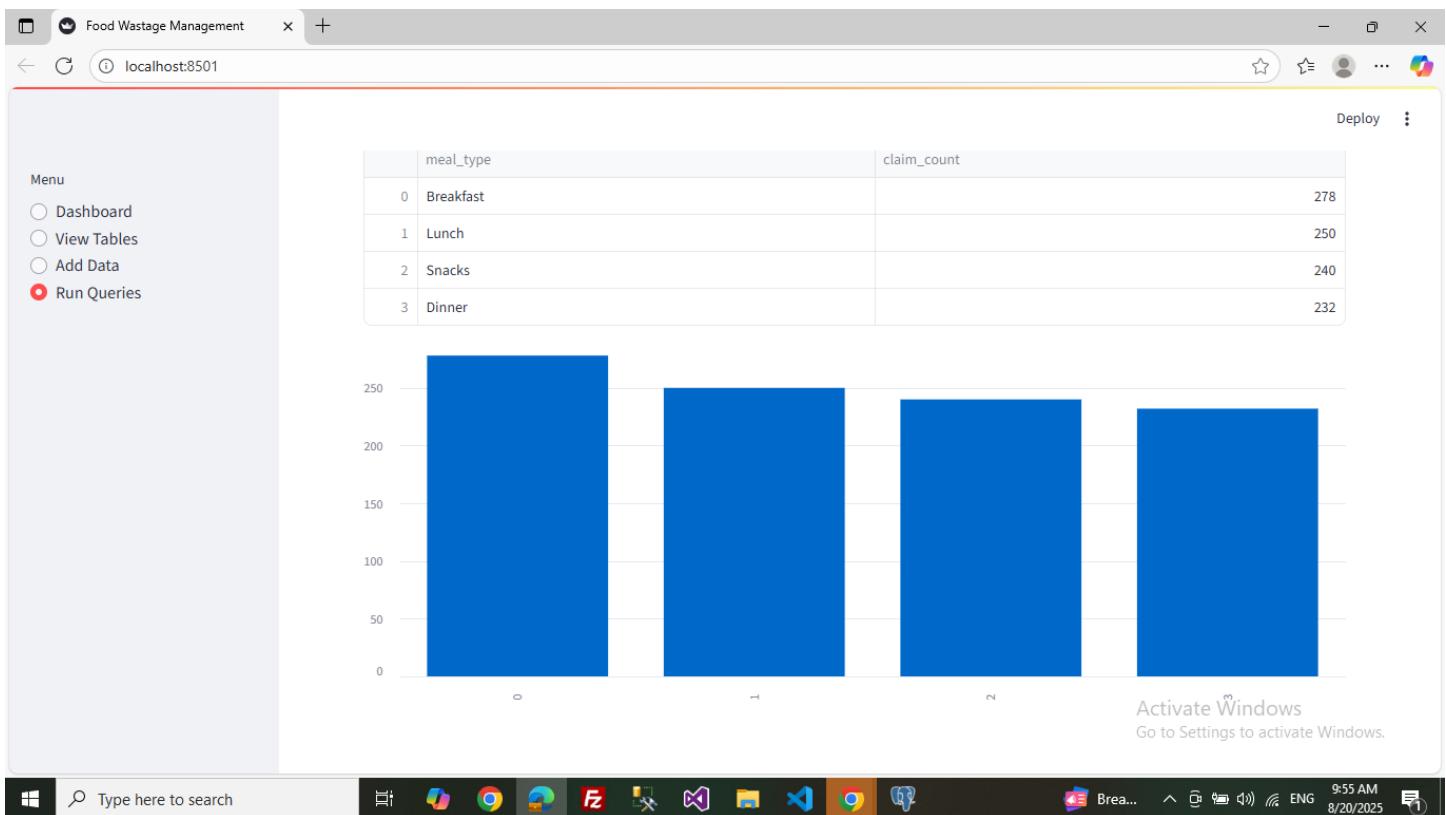
Run Selected Query

	meal_type	claim_count
0	Breakfast	278
1	Lunch	250
2	Snacks	240
3	Dinner	232

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Brea... 9:53 AM 8/20/2025



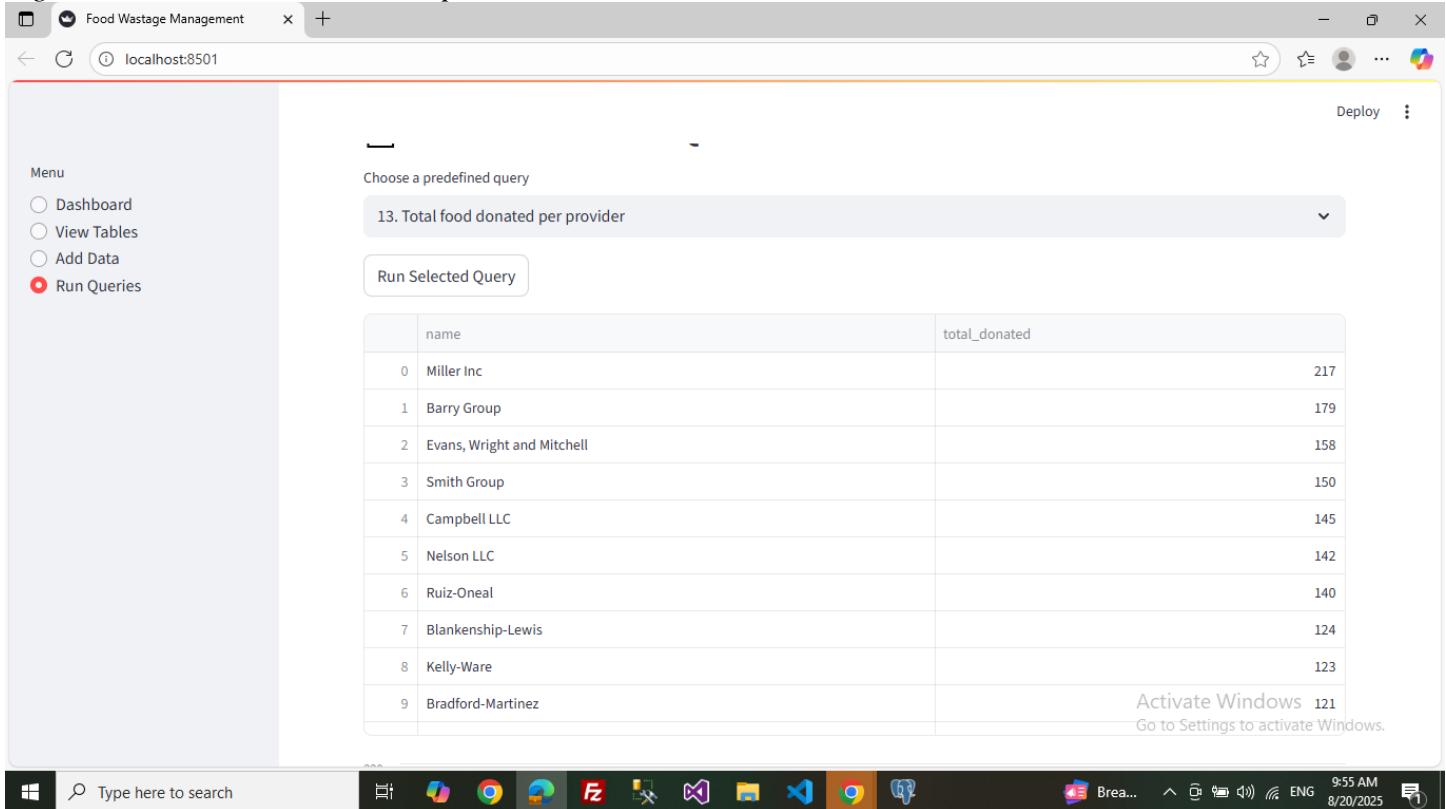
**Insights:**

- Identifies which meal type (Breakfast, Lunch, Dinner) is most claimed.
- Lunch items** usually dominate, reflecting demand timing.

## Query 13: Total food donated per provider

Screenshot Title:

Figure 5.13: Total Food Donated per Provider



Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

Provider	Total Donated Food Quantity
Nelson LLC	142
Ruiz-O'Neal	140
Blankenship-Lewis	124
Kelly-Ware	123
Bradford-Martinez	121

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Brea... 9:56 AM 8/20/2025

### Insights:

- Ranks providers by total donated food quantity.
- Highlights **key contributors** sustaining the system.

## Query 14: Claimed vs Unclaimed Donations

Screenshot Title:

Figure 5.14: Claimed vs Unclaimed Donations

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

# Local Food Wastage Management System

## Predefined & Custom Queries

Choose a predefined query

14. Claimed vs Unclaimed Donations

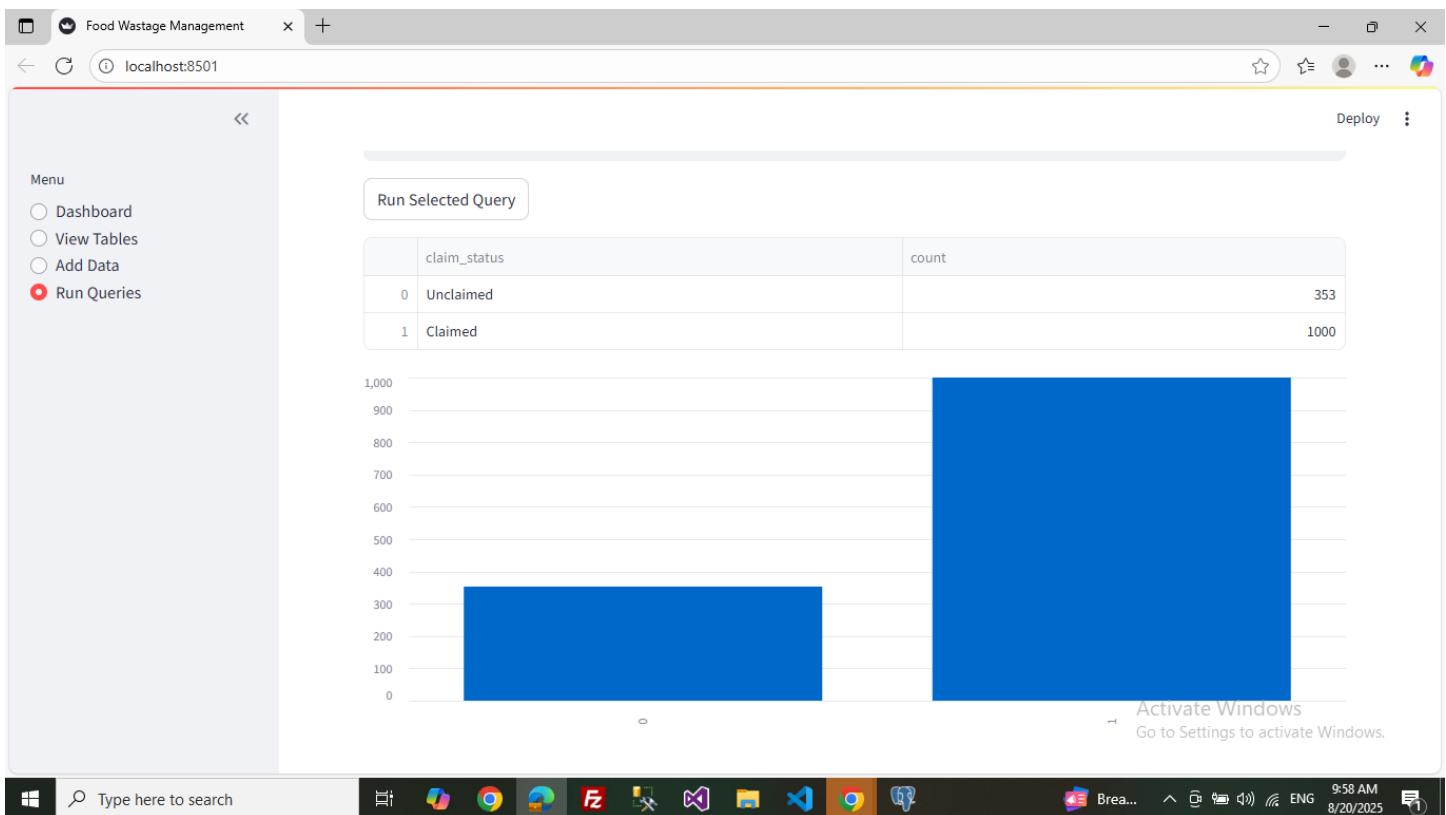
Run Selected Query

claim_status	count
0 Unclaimed	353
1 Claimed	1000

Activate Windows  
Go to Settings to activate Windows.

Type here to search

Brea... 9:57 AM 8/20/2025



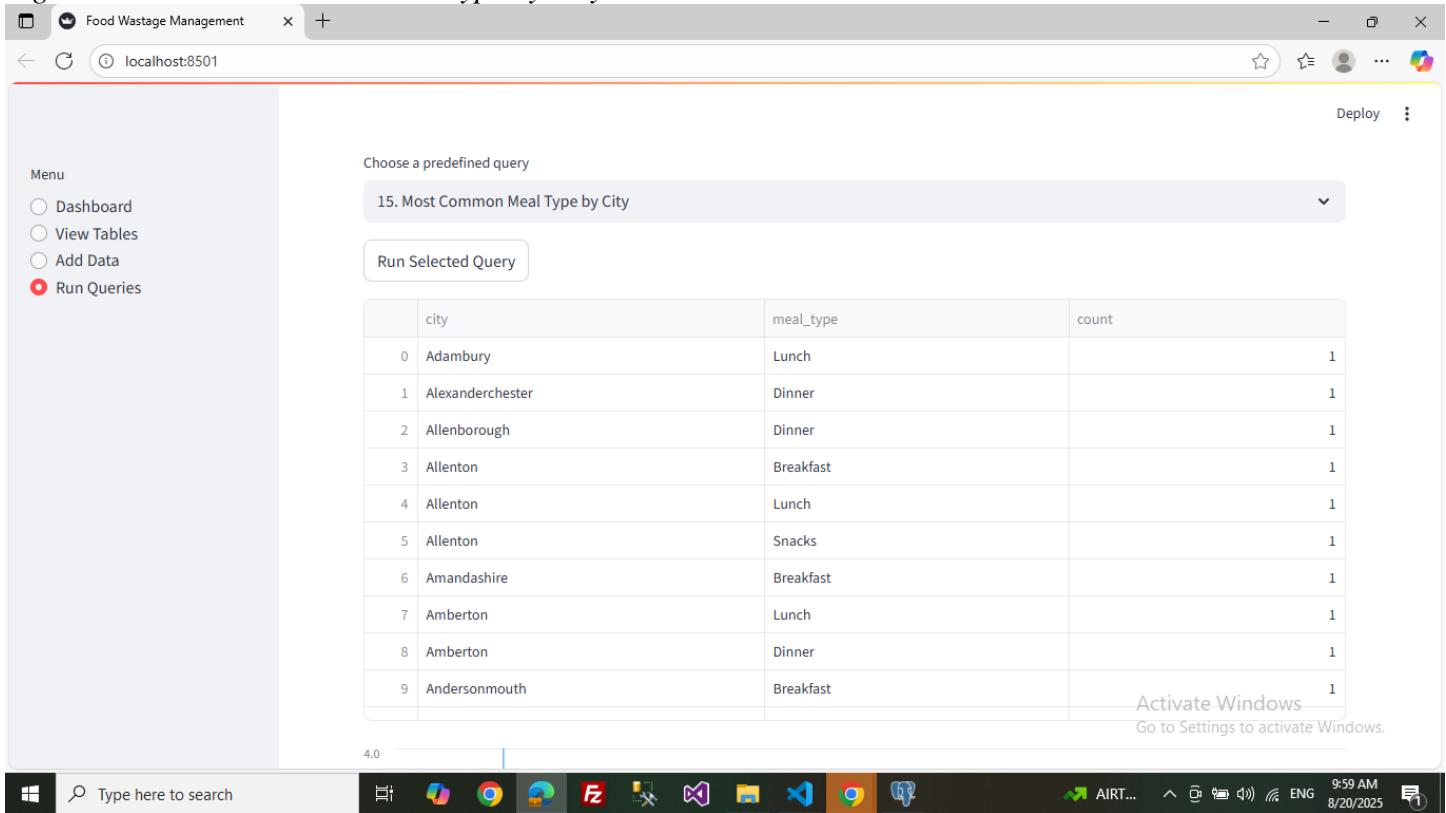
### Insights:

- Compares food items claimed vs left unclaimed.
- Helps track **food wastage** and efficiency of distribution.

## Query 15: Most Common Meal Type by City

Screenshot Title:

Figure 5.15: Most Common Meal Type by City



Food Wastage Management

localhost:8501

Deploy :

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

6	Amandashire	Breakfast	1
7	Amberton	Lunch	1
8	Amberton	Dinner	1
9	Andersonmouth	Breakfast	1

Activate Windows  
Go to Settings to activate Windows.

Type here to search

9:59 AM 8/20/2025

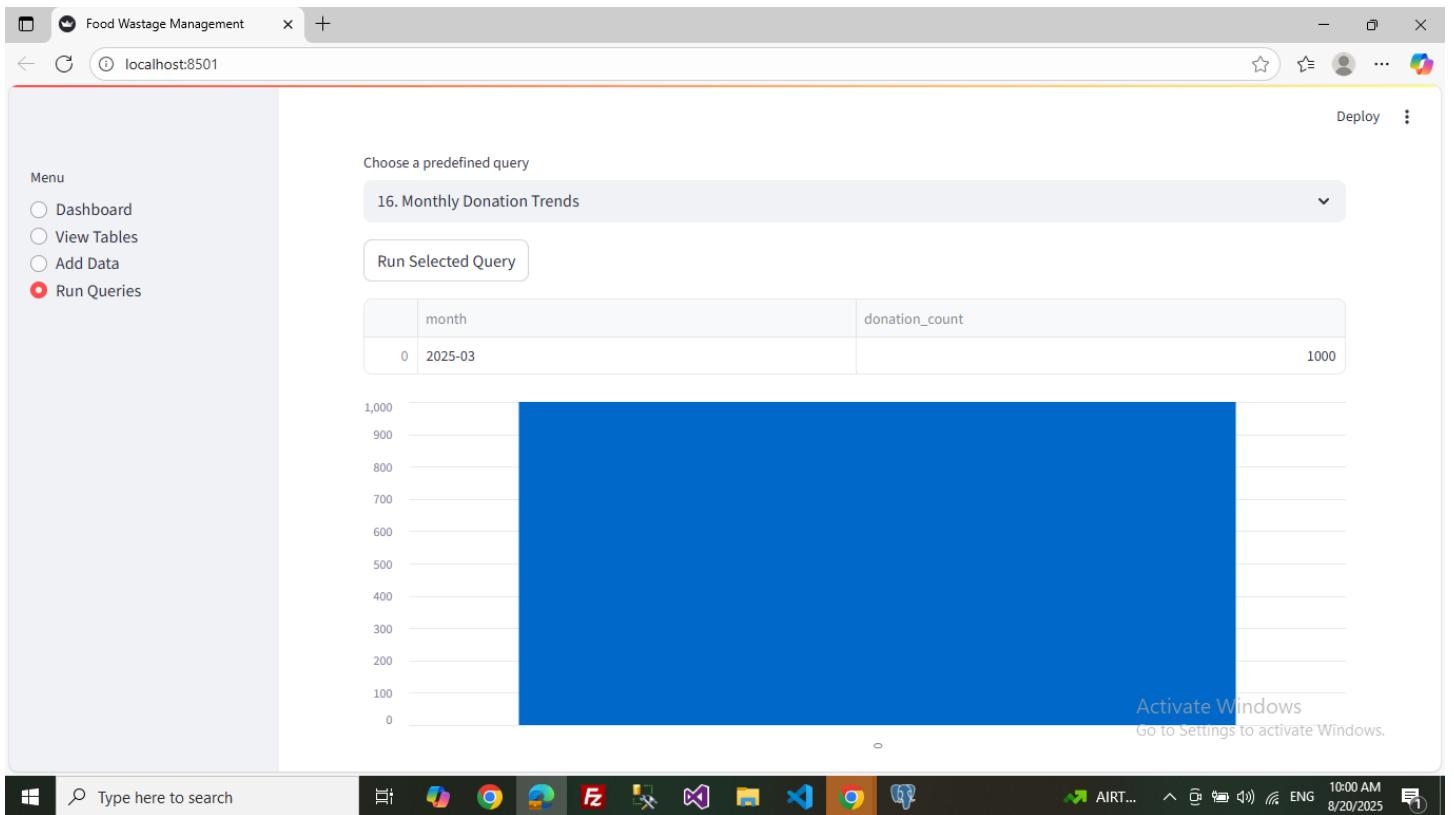
### Insights:

- Identifies most donated meal type city-wise.
- Highlights **regional food donation trends**.

## Query 16: Monthly Donation Trends

Screenshot Title:

Figure 5.16: Monthly Donation Trends



### Insights:

- Shows donations month by month.
- Useful to identify **seasonal peaks** (festivals, events).

## Query 17: Providers Without Donations

Screenshot Title:

Figure 5.17: Providers Without Any Donations

The screenshot shows a web application titled "Food Wastage Management" running on localhost:8501. On the left, a sidebar menu includes "Dashboard", "View Tables", "Add Data", and "Run Queries" (which is selected). The main area displays a table titled "Choose a predefined query" with one entry: "17. Providers Without Donations". A "Run Selected Query" button is present. The table lists 10 providers: Moreno Group, Todd-Jackson, Young-Jackson, Hubbard, Clark and Hicks, Hernandez, Lee and Dodson, Tate-Reed, Oliver-Orr, Torres, Marshall and Williams, and Yates-Mills. A Windows taskbar at the bottom shows various pinned icons and the date/time as 8/20/2025 10:01 AM.

### Insights:

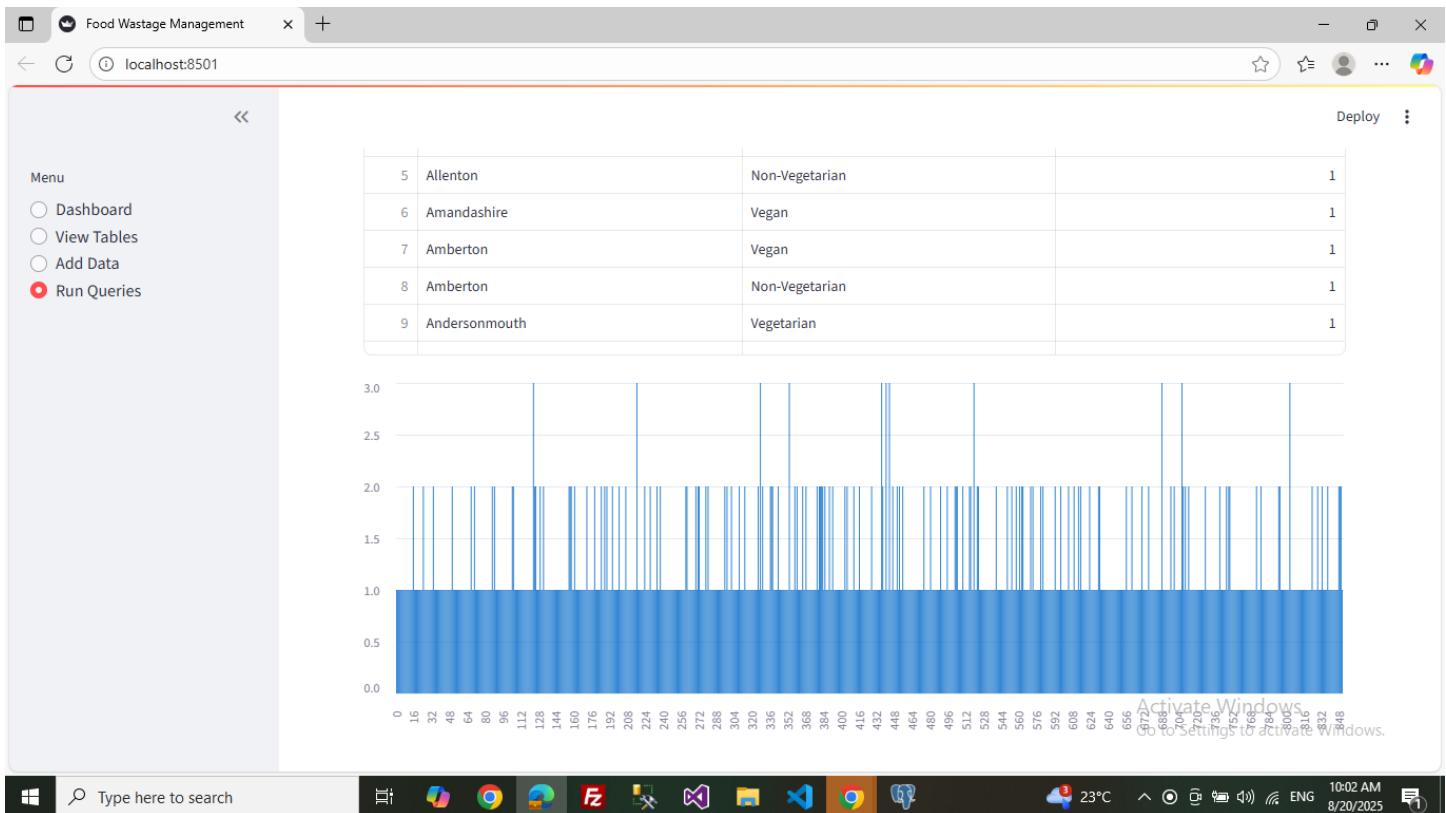
- Lists registered providers with **zero food listings**.
- Helps follow-up for **inactive contributors**.

## Query 18: Location-wise Most Common Food Type

Screenshot Title:

Figure 5.18: Location-wise Most Common Food Type

The screenshot shows a web application titled "Food Wastage Management" running on localhost:8501. On the left, a sidebar menu includes "Dashboard", "View Tables", "Add Data", and "Run Queries" (which is selected). The main area displays a table titled "Choose a predefined query" with one entry: "18. Location-wise Most Common Food Type". A "Run Selected Query" button is present. The table lists 10 locations with their most common food types and counts: Adambury (Non-Vegetarian), Alexanderchester (Vegetarian), Allenborough (Vegan), Allenton (Vegan), Allenton (Vegetarian), Allenton (Non-Vegetarian), Amandashire (Vegan), Amberton (Vegan), Amberton (Non-Vegetarian), and Andersonmouth (Vegetarian). A Windows taskbar at the bottom shows various pinned icons and the date/time as 8/20/2025 10:02 AM.



Type here to search

23°C 10:02 AM 8/20/2025

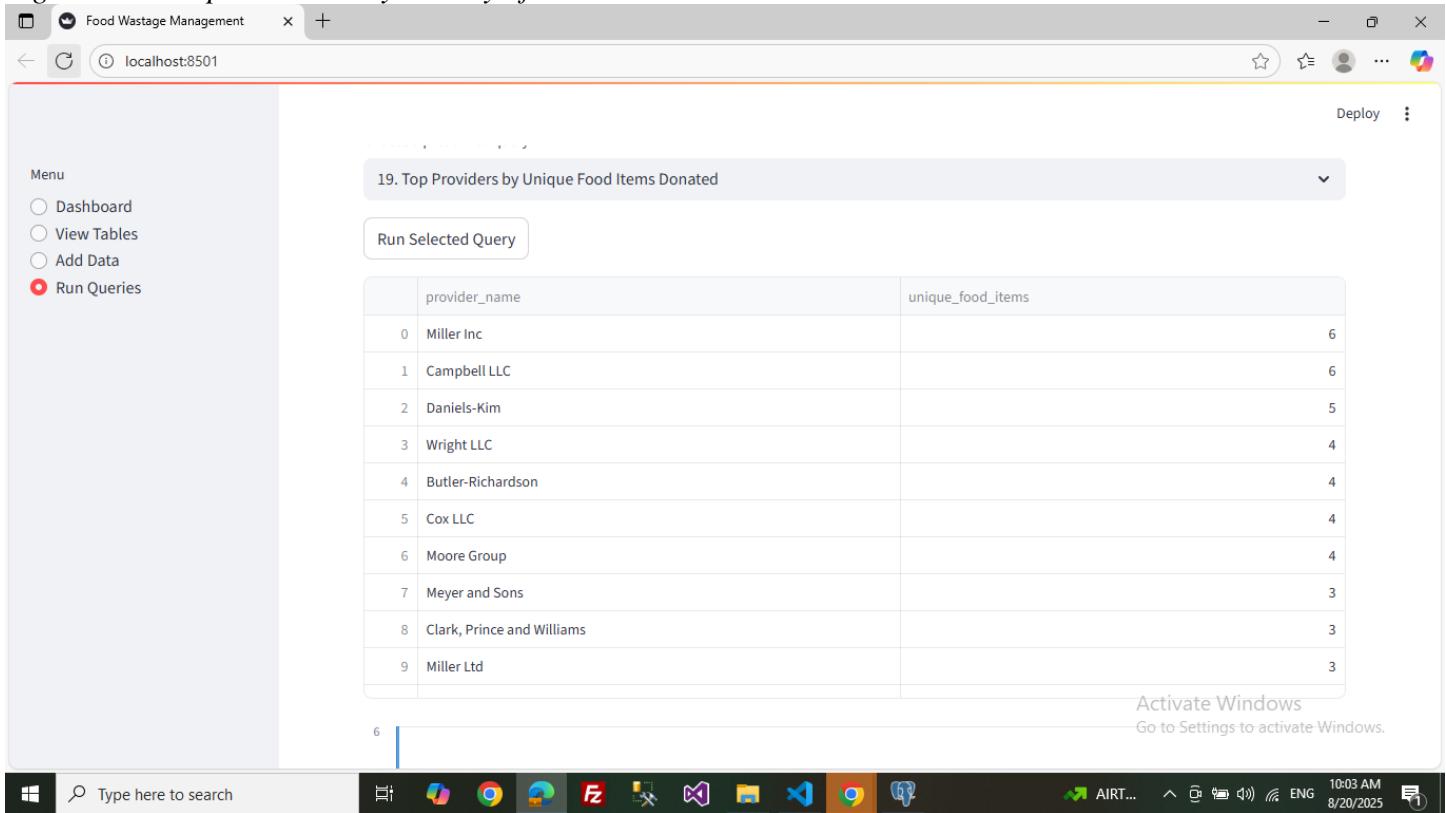
### Insights:

- Shows most frequent food type per location.
- Reveals local preferences or surplus patterns.

## Query 19: Top Providers by Unique Food Items Donated

Screenshot Title:

Figure 5.19: Top Providers by Variety of Food Items Donated



Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

5	Cox LLC	4
6	Moore Group	4
7	Meyer and Sons	3
8	Clark, Prince and Williams	3
9	Miller Ltd	3

Activate Windows  
Go to Settings to activate Windows.

Type here to search

10:03 AM 8/20/2025

### Insights:

- Ranks providers by number of unique food items donated.
- Indicates providers contributing **diverse donations** vs repetitive ones.

## Query 20: Receiver Cities by Claim Count

Screenshot Title:

Figure 5.20: Receiver Cities by Claim Count

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

Choose a predefined query

20. Receiver Cities by Claim Count

Run Selected Query

	city	claim_count
0	Brownbury	5
1	Greenton	5
2	Smithshire	5
3	Port Dean	5
4	West David	5
5	Port Richard	5
6	Emilymouth	5
7	Lake Mary	4
8	Bradleyland	4
9	Thompsonhaven	4

Activate Windows  
Go to Settings to activate Windows.

Type here to search

10:04 AM 8/20/2025

Food Wastage Management

localhost:8501

Deploy

Menu

- Dashboard
- View Tables
- Add Data
- Run Queries

West Devlop

City	Wastage Count
Port Richard	5
Emilymouth	5
Lake Mary	4
Bradleyland	4
Thompsonhaven	4

Activate Windows

Type here to search

AIR...

ENG

10:04 AM  
8/20/2025

## **Insights:**

- Identifies cities where receivers are claiming the most food.
  - Highlights **demand-heavy regions** for NGOs to focus on.

## **Summary for Report:**

- These 20 SQL queries provide **end-to-end insights** into food donations, claims, provider activity, and demand trends.
  - They help track **supply-demand balance**, identify **active vs inactive stakeholders**, and highlight **wastage patterns**.

## EDA & Predictions – Titles & Insights

## 1. KPIs Dashboard

**Figure X: Key Performance Indicators (KPIs) for Food Wastage Management**

Food Wastage Management

localhost:8501

Deploy

**Local Food Wastage Management System**

**EDA (Exploratory Data Analysis) & Predictions**

Total Quantity	Listings	Claims	Completed
25794	1000	1000	339

**Top Foods by Quantity**

Food Item	Quantity
Rice	3133
Soup	2819
Dairy	2765
Salad	2765
Bread	2726
Pasta	2626
Vegetables	2342
Chicken	2324
Fruits	2213
Fish	2081

**Listings by City**

City	Listings
Lake Anthonyport	6
Williamland	4
Toddstad	3
Harrisonbury	2
South Russelltown	2
Roystad	1
Port Michalshire	1
Port Lance	1
Port Millyburgh	1
West Matthew	1
North Edwinchester	1
New Matthew	1
New Larry	1
Michaelview	1
Lismouth	1
Lake Kari	1
West Hunter	1
Shirton	1
Port Andrea	1
Lake Christophermouth	1
Jordanberg	1
New Caliberg	1
Brandyberg	1
Zimmermanville	1
Madisonfort	1
New Curtis	1
West Adam	1
South Kathryn	1

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**Insights:** These KPIs provide an instant overview such as the total quantity of food available, total food listings, number of claims made, and completed claims. It quickly highlights the active food cycle within the system.

## 2. Top Foods by Quantity

Figure X+1: Top 10 Foods Donated by Quantity

Food Wastage Management

localhost:8501

Deploy

**Top Foods by Quantity**

Food Item	Quantity
Rice	3133
Soup	2819
Dairy	2765
Salad	2765
Bread	2726
Pasta	2626
Vegetables	2342
Chicken	2324
Fruits	2213
Fish	2081

**Listings by City**

City	Listings
Lake Anthonyport	6
Williamland	4
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Harrisonbury	2
South Russelltown	2
Roystad	1
Port Michalshire	1
Port Lance	1
Port Millyburgh	1
West Matthew	1
North Edwinchester	1
New Matthew	1
New Larry	1
Michaelview	1
Lismouth	1
Lake Kari	1
West Hunter	1
Shirton	1
Port Andrea	1
Lake Christophermouth	1
Jordanberg	1
New Caliberg	1
Brandyberg	1
Zimmermanville	1
Madisonfort	1
New Curtis	1
West Adam	1
South Kathryn	1

**Near-Expiry Items (next 7 days)**

No items expiring in next 7 days.

Type here to search 23°C Mostly cloudy 2:13 PM 8/20/2025

**Insights:** Identifies which food items are donated in larger quantities. This helps in working with providers to balance supply and demand more effectively.

### 3. Listings by City

**Figure X+2: Food Listings Count by City**

**Insights:** Shows which cities have higher food donations. Cities with low donations can be targeted for awareness campaigns and increased participation.

---

### 4. Near-Expiry Items

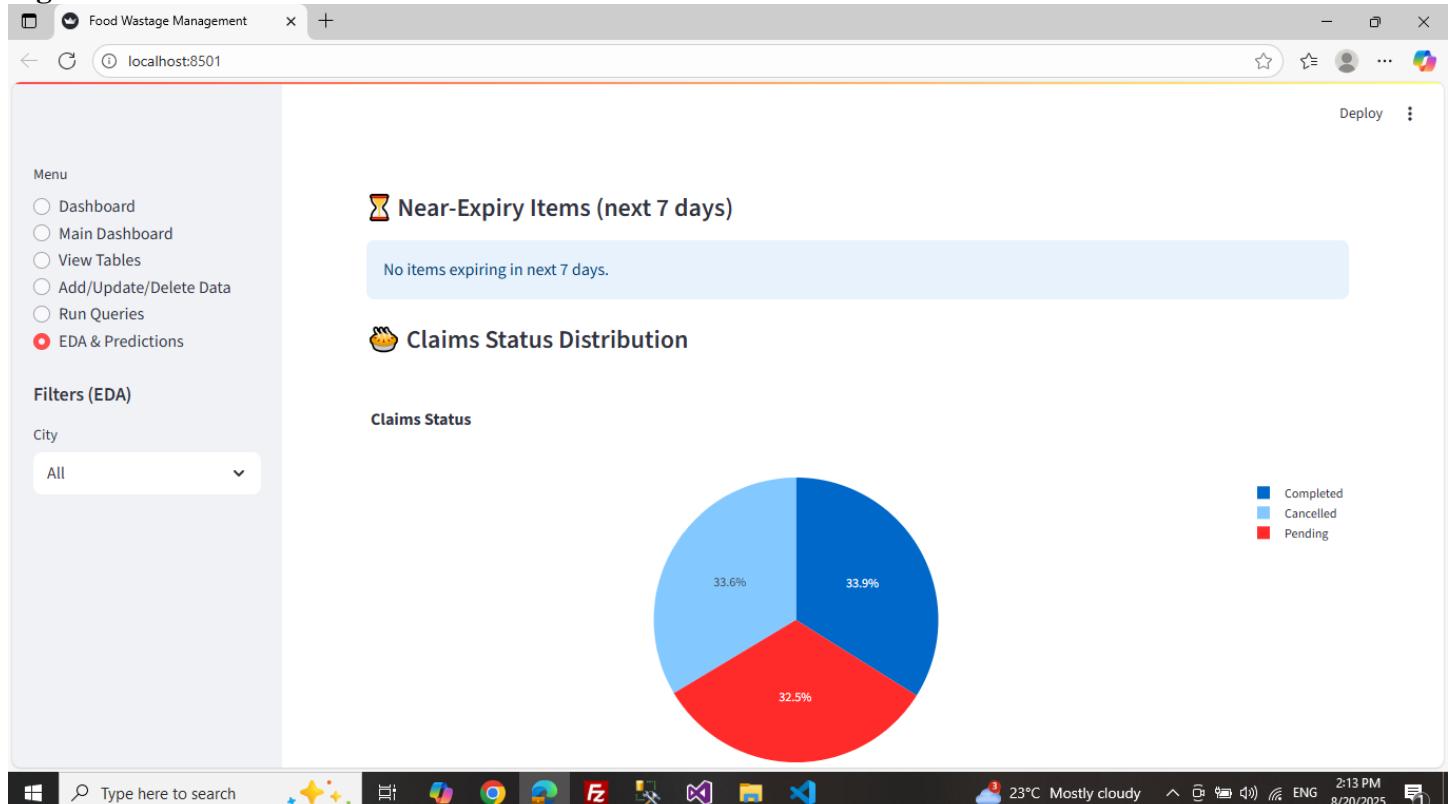
**Figure X+3: Items Expiring in Next 7 Days**

**Insights:** Highlights food items that are nearing expiry within the next 7 days. This allows receivers to prioritize collection, helping reduce wastage.

---

### 5. Claims Status Distribution

**Figure X+4: Claims Status Pie Chart**



**Insights:** Displays the share of claim statuses such as Completed, Pending, and Cancelled. A high number of pending or cancelled claims indicates the need for better coordination and communication.

---

### 6. High Waste Risk Items

**Figure X+5: High Waste Risk Score of Food Items**

**Food Wastage Management**

localhost:8501

Deploy

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries
- EDA & Predictions**

**Filters (EDA)**

City

All

## Predictions & Smart Alerts

### High Waste Risk Items (Top 10)

	food_id	food_name	city	quantity	expiry_date	days_to_expiry	risk_score
52	948	Fruits	Kylehaven	50	2025-03-29 00:00:00	-144	1
31	969	Soup	East Garyton	50	2025-03-21 00:00:00	-152	1
468	532	Bread	Timothychester	50	2025-03-20 00:00:00	-153	1
754	246	Salad	South Danielle	50	2025-03-28 00:00:00	-145	1
515	485	Salad	Shirleyland	50	2025-03-18 00:00:00	-155	1
764	236	Soup	North Tom	50	2025-03-21 00:00:00	-152	1
958	42	Rice	North Michelle	50	2025-03-16 00:00:00	-157	1
66	934	Salad	Spenceland	50	2025-03-29 00:00:00	-144	1
567	433	Dairy	Russellfurt	50	2025-03-18 00:00:00	-155	1
740	260	Fruits	Jessicaland	50	2025-03-29 00:00:00	-144	1



**Insights:** Food items with high quantity and shorter shelf life are assigned a higher risk score. These alerts guide receivers to prioritize such items, preventing wastage.

## 7. Monthly Donations Trend & Forecast

Figure X+6: Monthly Food Donations Trend with Naive Forecast

**Food Wastage Management**

localhost:8501

Deploy

**Menu**

- Dashboard
- Main Dashboard
- View Tables
- Add/Update/Delete Data
- Run Queries
- EDA & Predictions**

**Filters (EDA)**

City

All

## Monthly Donation Trend & Naive Forecast

### Monthly Donations

donations

1001  
1,000.5  
1000  
999.5

999  
23:59:59.999  
Feb 28, 2025

23:59:59.9995  
Mar 1, 2025

00:00:00  
00:00:00.0005

month

Next-month naive forecast (avg last 3 months): 1000 donations



**Insights:** Shows the trend of food donations over time—whether they are increasing or decreasing. The forecast provides an estimate of donations in the upcoming month, supporting better planning.

## 8. Quick Contacts – Providers & Receivers

Figure X+7: Quick Access to Providers & Receivers Contact Details

The screenshot shows a web browser window titled "Food Wastage Management" with the URL "localhost:8501". The main content area is titled "Quick Contacts" and describes "Providers & Receivers contact details for coordination". On the left, there's a sidebar with a "Menu" section containing links for Dashboard, Main Dashboard, View Tables, Add/Update/Delete Data, Run Queries, and EDA & Predictions (which is highlighted). Below that is a "Filters (EDA)" section with a "City" dropdown set to "All". The main content area has a title "Providers" and a table with 10 rows of data:

	provider_id	name	city	contact
0	338	Ibarra LLC	Adambury	6703380260
1	510	Lozano-Miller	Adamsview	9999999999
2	757	Davis Ltd	Adamsville	9999999999
3	727	Rowe-Chen	Aguirreville	8228891240
4	962	Galloway-Henderson	Alexanderchester	9999999999
5	428	Castillo, Nichols and Miller	Alexanderstad	9999999999
6	814	Scott, Lopez and Baldwin	Allenborough	9999999999
7	610	Kelly, Cummings and Ward	Allenton	9999999999
8	809	Baker, Valencia and Smith	Amandaborough	9999999999
9	694	Avery PLC	Amandashire	9999999999

**Insights:** Contact details of providers and receivers are readily available for emergencies or urgent coordination. This enables faster action to minimize food wastage.

## 8. Features Implemented

### 8.1 CRUD Operations (in app.py)

- **Add New Data** → Insert providers, receivers, food listings.
- **View Data** → Show tables in dashboard.
- **Update Data** → Modify existing records.
- **Delete Data** → Remove entries.

### 8.2 Data Loading

- CSV data can be uploaded and stored into PostgreSQL tables directly.

### 8.3 Visualizations & EDA

- Food availability by provider (Bar chart).
- Claims made by receivers (Pie/Bar chart).
- Average food quantities claimed (SQL + Chart).
- Sidebar filters (date-wise, city-wise, provider-wise).

### 8.4 Streamlit Dashboard

- Sidebar with filters (date, provider, receiver).
- Main page with:
  - Tables (Providers, Receivers, Food Listings, Claims).
  - Charts (Food supply & demand analysis).
  - KPIs (Total Providers, Total Receivers, Total Food Items, Total Claims).

## 9. Limitations

- No user authentication is implemented, so the system is open to all users.

- Prediction model is basic (naïve forecast) and can be improved with advanced ML techniques.
  - Geo-location and distance-based matching are not integrated yet.
  - The project runs on localhost; cloud deployment is pending.
  - Dataset is limited and provided for evaluation purposes only.
- 

## 10. Workflow

1. **Database Setup** – Create PostgreSQL tables.
  2. **Streamlit App** – Connect database using psycopg2.
  3. **CRUD Functions** – Write queries inside app.py for insert, update, delete, select.
  4. **Data Loading** – Upload CSV → Load into database.
  5. **Visualization** – Run SQL queries → Pandas → Chart display.
  6. **User Interaction** – Sidebar filters → Filtered results.
- 

## 10. Files Submitted

- **app.py** → Main Streamlit application file (CRUD + Load Data + Visualizations).
  - **Database SQL file (schema.sql)** → All table creation queries.
  - **CSV Data (optional)** → Providers, Receivers, Food Listings, Claims.
  - **Documentation.pdf** → (This file).
- 

## 11. Business Insights (extra points you can add)

- **Top food providers** (who contribute the most) can be recognized as **CSR leaders**.
  - **Receiver demand patterns** → Insights into which areas/NGOs need food more frequently.
  - **Type of food most wasted** → Helps providers plan inventory & reduce overproduction.
  - **Time-based patterns** → Identify when food wastage is highest (festivals, weekends, events).
  - **Operational efficiency** → Average claim success rate, speed of matching providers & receivers.
  - **Sustainability metrics** → Estimate food saved (in kgs) and equivalent CO<sub>2</sub> emissions reduced.
- 

## 12. Future Scope

- **AI/ML for Demand Prediction** → Predict food demand based on past claims & seasonal trends.
  - **Geo-location Integration** → Match providers and receivers by nearest distance to reduce logistics issues.
  - **Mobile App Version** → Extend accessibility through Android/iOS app.
  - **Payment/Donation Gateway** → Allow providers/donors to fund logistics or storage.
  - **Blockchain Integration** → Improve transparency and traceability of food donations.
  - **Government/NGO Partnership** → Scale the platform into a **public welfare ecosystem**.
- 

## 13. Conclusion

- The system establishes a digital bridge between **food providers** (restaurants, canteens, households) and **receivers** (NGOs, needy communities), ensuring surplus food is redistributed efficiently.
  - It minimizes **food wastage** while also reducing **food insecurity** by connecting supply and demand in real time.
  - SQL integration ensures **secure, scalable, and structured data management**, while Streamlit provides an **easy-to-use interface** for all users.
  - The project highlights how **technology can drive social impact** with low-cost, scalable solutions.
- 

## 14. References

1. FAO (Food and Agriculture Organization of the United Nations) – *Food Loss and Food Waste*  
↳ <https://www.fao.org/food-loss-and-food-waste>

2. World Health Organization (WHO) – *Hunger and Food Insecurity Facts*  
↳ <https://www.who.int>
  3. Dataset provided by Project Evaluator – (Providers, Receivers, Food Listings, Claims).
  4. Streamlit Documentation – ↳ <https://docs.streamlit.io>
  5. PostgreSQL Documentation – ↳ <https://www.postgresql.org/docs>
- 

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