



## **INFO6210 Foodbank Database**

### **Database Specification: - Purpose, Business Problems Addressed, Business Rules**

#### **Database Purpose:**

The overall objective of the project is to build a food bank management tool that allows a charitable organization/food bank to receive, distribute, manage, and track food inventory as well as maintain records of Users, Employees and agencies managing the Food Bank

The intended users of this database are the management, administrative and ground staff.

#### **Business Problems Addressed:**

- Allow Managerial and administrative staff to track food bank transaction history
- Provide information to monitor flow of commodities
- Allow personnel to monitor consumption patterns and thereby refill inventory based on the data.
- Allow personnel to be anticipative for the shortages of food and thereby place the orders automatically when commodities reach below the threshold quantity.
- Permit staff to track donations in commodities as well as monetary funds.

#### **Business Rules:**

- Food Bank may have one or more records
- Transaction Header may have zero or more records
- Transaction may have zero or more records
- Employee may have one or more records
- Agency may have one or more record
- Donations may have zero or more records
- Orders may have zero or more records
- User may have one or more Users
- Household may have zero or more records
- Inventory may have one or more records
- Fundraisers may have zero or more records
- Each entry in User may have one or more entry in household
- Each entry in Transaction Header may have one or more entry in Transaction
- Each entry in Food Bank may have zero or more entry in Users
- Each entry in Food Bank may have zero or more entry in Orders
- Each entry in Food Bank may have zero or more entry in Donations
- Each entry in Food Bank may have zero or more entries in Transaction Header
- Each entry in Food Bank Header may have zero or more entry in fund raisers
- Each entry in Food Bank may have one or more entry in employee
- Each entry in inventory will have one entry in Food Bank .
- Each entry in Transaction will have one entry in inventory.
- Each entry in Agency may have one or more entry in employee

Entity name	Why Entity is Included	How Entity is related to other Entities
FOODBANK	The Primary purpose of the FOODBANK Entity is to maintain records of the participating foodbanks and their details like location served, active/inactive status and funds.	As the Core Entity in database , FOODBANK has the Primary key FoodbankID which is related to the entities TRANSACTION HEADER, EMPLOYEES, HOUSEHOLD, ADDRESS AND FUND_RAISER. To maintain and manage the records of Transactions and the Employees working in it with orders and funding events FOODBANK needs to be related to the above mentioned entities
TRANSACTION HEADER	The TRANSACTION_HEADER table stores top-level inventory transaction records for food banks. Every time someone donates or receives food from a food bank, a row is created in this table. Top-level transaction information such as ORDERID DONATIONID, , the transaction date, and receipt information are tracked in this table. The TRANSACTION_HEADER table tracks the type of transaction (Receive, Distribute) and is used to calculate current inventory levels for a food bank. A food bank tracks one-to-many transaction header records. A entry can participate in one-to-many food bank transactions..	The TRANSACTION HEADER is related to the entities FOODBANK to fetch Foodbank details and to , DONATIONS and ORDERS because Each entry in the transaction header will have one many transactions under it. And each entry in order and donation entity will create a transaction which will then decide if the transaction type is positive or negative depending on the value of the attribute FOODBANKTXTYPECODE in the transaction header.
FOODBANK_TRANSACTION	The FOODBANK_TRANSACTION detail table stores the individual food items and amounts for a given transaction. If a user donates a gallon of milk, five boxes of cereal, and 10 cans of vegetables, then one row is created in the USR_FOODBANKTXHEADER table and three rows are created in the USR_FOODBANKTXDETAIL table. The LINEAMOUNT column is a calculated field with an expression equal to FoodItemAmount * Quantity.	The FOODBANK_TRANSACTION Table is an extension of the FOODBANK_TRANSACTION_HEADER entity and act as a detail entity showing the food items ordered or donated in the TRANSACTION along with acting as a - mapping entity for the TRANSACTION_HEADER and INVENTORY Entity allowing for simultaneous tracking of food items consumed or added. To he inventory thereby retaining a one to many relation with TRANSACTION HEADER and a many to one with INVENTORY
INVENTORY	The INVENTORY Acts as a tracking entity for Food Items for corresponding food banks This Entity maintains a simple list of Food SKU's along with their qty and weights allowing for a tracking of food items remaining in the inventory of a particular food bank	The inventory is in a many to one relation with FOODBANK_TRANSACTION entity allowing for a calculation of food items added or subtracted in each transaction with the help of it's primary key FOODITEMID
DONATIONS	The DONATIONS are included to maintain the records of food item collected by each Food bank thereby creating a transaction for each donation in the TRANSACTION_HEADER Entity. The Donation Contains Inventory location id, and it being a unique combination of food item id and foodbank id, easily helps us to calculate the donations received by a particular foodbank.	The Donations Entity is related in a one to one relationship with TRANSACTION HEADER thereby allowing for a single transaction header id to be created with each donation id which may or may not contain multiple transactions for the same.
ORDERS	The ORDERS entity are included to maintain the records of orders created by each Food bank thereby creating a transaction for each orders in the	The ORDERS Entity is related in a one to one relationship with TRANSACTION HEADER thereby allowing for a single transaction header id to be created with

	TRANSACTION_HEADER Entity. The ORDERS Contains Inventory location id, and it being a unique combination of food item id and foodbank id, easily helps us to calculate the orders received by a particular foodbank.	each order id which may or may not contain multiple transactions for the same..
EMPLOYEES	The EMPLOYEES entity is included to maintain the records of employees working in FOODBANK	The main purpose of relating the entity EMPLOYEES with the FOODBANK is to maintain the records of EMPLOYEES along with their ID, agency they are from, the FOODBANK they are working in, their First name, Last name and their type of employment .
AGENCY	The AGENCY entity is included to maintain the records of the EMPLOYEES to decide from which agency a particular employee has join the FOOD BANK	The purpose of relating the entity AGENCY to the EMPLOYEES is to maintain the records of each employee's AgencyID and Agency name.
HOUSEHOLD	HOUSEHOLD entity is included to maintain the records of household members that depend on each User in the USERS entity table	The HOUSEHOLD Entity is related to the USER Entity in a many to one relation as each entry in the USER table may have many entries in the household table, It contains the details of the members that depends on the Users in the USER table
USER	USER entity is included to maintain the details of all the users of the foodbank. It contains the login credentials of each User as well as essential info like SSN joining month, year etc.	The entity USER is associated only to the HOUSEHOLD entity with a one to many relationship and is associated with the FOODBANK entity in a many to one relation as multiple entries in the Users table can use a single Food Bank
ADDRESS	ADDRESS entity is included to maintain the address of all the food banks	The ADDRESS Entity is related to the FOODBANK Entity in a one to one relation as It contains the address of each foodbank in the FOODBANK Entity
FUND_RAISER	FUND_RAISER entity is included to maintain the records of each FUND_RAISER program conducted by a FOODBANK and also to record the Funds collected on each program.	FUND_RAISER entity is directly related to FOODBANK entity; as it maintains the details of funds raised by the event organized by the food bank
INVENTORY LOCATION	The INVENTORY LOCATION entity helps in tracking the weight and quantity of Food Items left in each Food Bank	The INVENTORY LOCATION is in a many to one relation with the INVENTORY entity and in a one to many relation with FOOD BANK TRANSACTION. It helps in mapping each FoodItemId with a FoodBankID .