RUEDI Online Food Hub Database Plan

BUS371 Management and Organizational Behavior

By:

Imran Abbas, Nathan Johnson, Shondra Morris,

Becca Muick, Andrew Rudakas, Chris Weisgerber

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Executive Summary

This report provides recommendations and an outline to use in the creation of the upcoming RUEDI Food Hub database that will be in effect in the future. There are four major areas of information to be collected and stored in the database. These areas include information on: users, products, orders, and producer certifications.

User information consists of both necessary details about customers and producers interacting via the food hub. Required data fields would include contact information, classification information (types of customer or types of producer), and login in credentials for the food hub interface such as usernames and passwords.

A running list of all available products for purchase through the food hub will be an essential part of the database. Fruits, vegetables or meat, the price of each good, the quantity it is measured and can be provided in, these are some of the required fields that need to be stored about products.

There also needs to be places to record information about customer orders. Order numbers, products purchased and in what quantities, dollar amounts of orders – this is all data that must be stored in order to successfully transfer information to the necessary parties. Having this information will allow the food hub to go back and resolve any potential problems that may arise with orders.

Certifications are not as big an area compared to user information, products, and orders. Rather, certifications tie into information regarding producers supplying the food hub. A Good Agricultural Practices (GAP) certification is required to register to supply the food hub, but it would be prudent to list any other certifications producers hold for transparency and trust building with customers.

There are various relationships between all the data that will be stored in the database. Producers are linked to certifications and the products they supply. The producer-product relationship then ties into another relationship between products and orders. Orders are then related to customers who place them.

Going forward, there will need to be research done to populate the database in regards to products and their related information, as well as the types of certifications to display on the food hub. These two areas should have preset options users can choose from an online food ordering website supported by this database.

Overview

This plan outlines the framework to construct a database in order to support an online food ordering website. The website's purpose is to create an easy-to-use tool to order fresh local food online. The database's main components will deal with storing information about customers buying food from the website, producers supplying products, and the products offered.

While the focus of the plan is to outline the information necessary to include in the database, there are also remarks related to the food hub's website design as well.

Methodology

Our BUS371 team researched other online food distribution websites and what is necessary to display for them in order to create this report. We stored the kinds of information needed in tables within Excel. After establishing the needed fields of information, we used Access to create a relationship diagram between the tables created and imported from Excel. Both our Excel file and Access database file will provided along with this report.

The total hours worked by the team together was estimated to be around 28 hours. Individual hours worked are as follows:

- Becca, 13 hours
- Nathan, 9 hours
- Shondra, 9 hours
- Chris, 8 hours
- Andrew, 9 hours
- Imran, 8 hours

User Information

The website, or "Food Hub", will require registration. There will be two basic types of users accessing the website: customer and producers. Both will have different sub-types associated with them that will be stored in two separate tables that this report and attached files call *Customer Master List* and *Producer Master List*.

Customers

For customers, they will be asked to choose the type of account they would like to set up. The available options should be the following:

- Individual
- Business

RUEDI may desire to include more account types to accommodate different kinds of users.

After selecting their account type, users will be prompted to enter further information. For businesses, they will be asked to provide:

- Name of the business
- Business's address
  - Including city, county, state, and zip code of business location
- First and last name of the contact within the business responsible for orders
- Business contact's address
  - Includes city, county, state, and zip code
  - Can be the same as business address
- Business contact's email address and phone number
  - Should recommend they enter their business phone number
- Username for business account
- Password for business account

County selection should only include those the food hub will operate in, and thus should be limited to a preset list of Wabash Valley counties.

Users signing up with an individual account will provide the same information except for filling in the business name and address fields. Their form should not even include a way to input those fields, and their records in the database should be blank under them.

All of the above items of information need to have places in a master list of customers in the database.

Producers

For producers signing up, they will need to enter the following information:

- Name of Business
- Type of Farm
  - Can specify by size of farm or if a specialized farm
- Address of Business
  - Needs to include county as well
- Business Phone Number
- Email address
- Username
- Password

The scale defining types of farms will need to be explained on the sign-up page.

Producers will also have the optional choice to list a representative or contact, which will need to have:

- First and last name
- Address
- Phone Number
- Email

With the exception of first and last name, the other three fields should have the option of using the address, phone number, and email information previously entered.

Producers also can provide extra information, including the types of certifications they hold. One in particular, GAP (Good Agricultural Practices), is required for producers to sell products through the Food Hub, but they can still register. This certification thus needs to have a Yes/No field in the database.

Other certifications can be added up to as many as a producer holds, and this functionality is discussed later in the report under the Certifications section.

Ideally, customers will be able to give feedback and rate producers they buy from. Producer records need a field for this rating and feedback comments to be stored.

Finally, when producers sign up they will provide which products they have available to sell. Producers will be prompted to select the types of products they have available from preset lists of different categories of products, then fill in the following additional details:

- Unit Price
- Unit Quantity
    - Quantity product is measured in, such as pounds, bunches, bushels, etc.
- Product availability
    - Denotes the maximum amount of the product chosen; for example, 10 bunches of apples if bunches were the chosen quantity type selected

Regarding the quantity products may be listed in, the specific choice depends on the product and how farmer measures it. Further research and farmer feedback on popular quantity choices may be required. A potential solution would be to offer a set list of potential quantity distinctions for farmers and customers to select from to be updated as needed.

Products

The Food Hub will draw from a preset product list producers will choose from during sign-up, as well as for potential customers to search through. The different kinds if products are separated by specific product categories listed below. The master table for housing all available products should include these fields:

- Category
  - Fruits, Vegetables, Meat and Poultry, Eggs, Herbs, or Flowers
- Product Name
- Variety
  - For use with products with different types
  - Examples: roma, slicer, or grape tomatoes; large eggs and jumbo eggs
- Special note
  - Whether or not the product was grown using no pesticides, herbicides, or is organic

The RUEDI master database file contains a list of potential products to use, but additional research or surveys of farmers may reveal the need to include other products.

Orders

Since the database will be supporting an online shopping system, it must be able to store information about all the orders that will take place. Information in this table, or tables, will need to relate to the customer table to connect to a customer's address for shipping or payment methods. These are the items identified that will need to be stored:

- Order Number
- Customer ID
- Products Ordered
- Amount of Order
- Payment Method
- Date of Order

Customers will be able to go on the site and search for the products they wish to order. After finding their desired products, they will enter how much of each product they want to purchase and then move to a checkout page or continue shopping.

Regarding suggestions for the web site of this section, there should be functionality to let customers save preferred methods of payment to speed up the checkout process. This information may be stored in the *Customer Master List* or in a separate table. There also should be an option to save orders to easily re-order the same thing in the future.

Certifications

There should be a table in the database that lists all the selected certifications RUEDI desires to display on the food hub, and provides a brief description on each to display for users upon request. Additional certifications may be researched and added as needed. Some certifications may have to be removed if they are not relevant to RUEDI's goals.

These certifications also need to be linked to producers who carry them. Users should be able to request a list of producers with a specific certification, or products from a producer with a specific certification for viewing.

Relationships

The following picture is of from our Access database file. It displays the relationships between the tables desired. The logic and methodology of our database is not to be used straight as is, but as a framework to build off of and use as a guideline. There are some elements our team was unable to fit into tables as their handling was outside our expertise. These elements are all discussed in the above sections, and need to be addressed as seen fit.
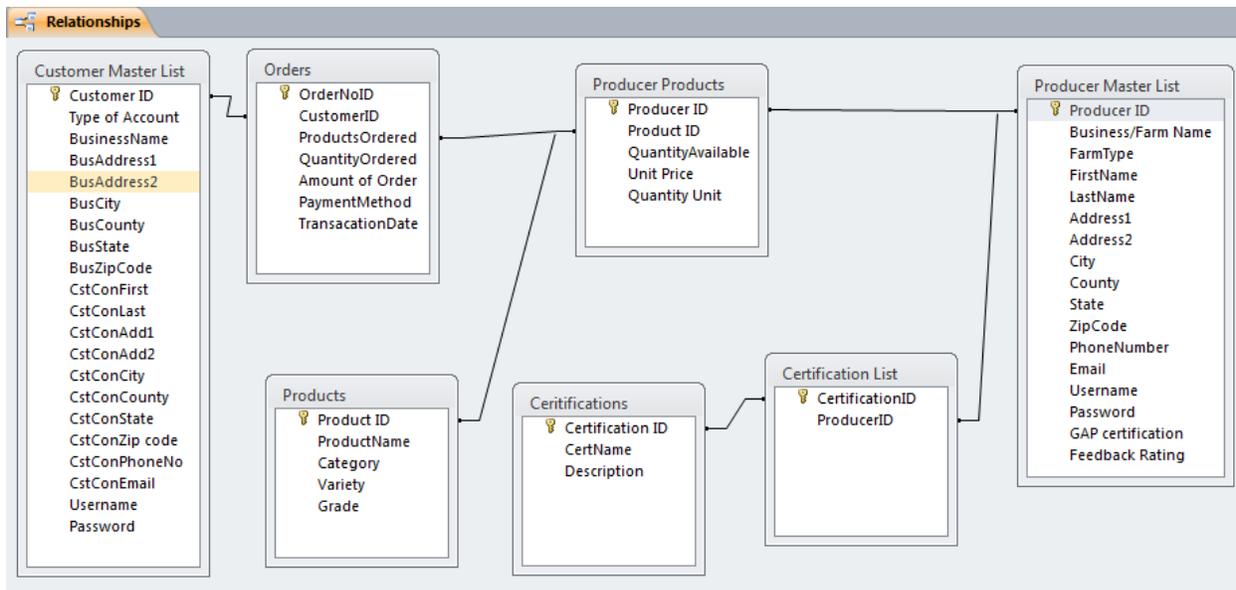
As shown, each of the above tables lists each table's respective elements. Most categories have been given descriptive names for example purposes, and all refer back to the previously covered sections on what each table includes. For clarifying this picture however, in regards to the *Customer Master List* table, the address, city, county, state, and zip code information are split between the business's (i.e. BusAddress1) and the supplied contact customer users gave upon sign-up (i.e. CstConCity). If a user has an Individual account, the business fields would be empty.

Moving from left to right in the diagram, let us start with the *Customer Master List* table's relationship with the *Orders* table. Many customers make orders, but only one order may be

connected to any one customer. *Orders* thus should have a field linking it to customer information, as shown in the field *CustomerID*.

The *Orders* table is connected to the *Producer Products* table, which stores which producer can supply which product, the quantity the producer has available to sell of that product, the product's price, and the quantity the product may be ordered in. One order may include multiple products, so this table needs to be able to allow for that.

The *Producer Products* table references products from the *Products* table, and thus needs an appropriate field linking the tables together. Many producers can be connected to many different products. *Producer Products* also needs a field connecting producers to records, so another field must be present to link this table to the *Producer Master List* table. Again, many producers can be connected to any number of products.

From the *Producer Master List* table, the different certifications producers hold must be connected to each relevant producer. Thus, the intermediate table *Certification List* should serve as a place to store and link producers to certifications listed in the *Certifications* table. One producer may have many certifications, and a single certification can be carried by many different producers.

Recommendations

Going forward from here, this plan should be converted into a working database that will hold all the information previously outlined. During this phase there may be another group working to populate the fields that will not accept user input but instead offer users to make selections from an established list.

There are several areas that will require additional research. Products and certifications are the two largest areas of information that may require more research. If any other product outside of what is recorded in RUEDI's current lists are to be added, these will require research on their availability in the Wabash Valley. RUEDI must also make the decision on which certifications the food hub should display about the producers supplying goods. While GAP is required, it would be beneficial to list as many relevant certifications producers in the Wabash Valley hold. There also needs to be additional information gathered from producers on how they quantify and price their goods. Whether to use a metric unit measurement system or not should be considered, or figuring out all the different units beyond bushels, bunches, and the like that will be necessary to list products for ordering.

Beyond the database, another group will be responsible for building the food hub's website and connecting it to the created database. It will be this group's job to consider and research the proposed feedback system. However, the database group will need to structure appropriate places in the database to handle storing that information.

RUEDI also desires the following functionalities:

- A pending member status that will notify them when someone wishes to sign-up for the website; they will need to be confirmed
- Queries created to do searches such as:
    - How much a selected producer sold
    - Total amount of revenue exchanged between all producers
    - Amount of revenue food hub receives from total revenue (Food Hub will get 20% of each sale)

Other queries will need to be created for further uses RUEDI finds necessary. A query that sorts through products all the information related to that product (producer, producer's certifications, price, etc.) would be another such query the database will need.

It is our hope after the website is implemented that the food hub can begin operation.