Problem Space

Chico State, like many other universities, has a [food pantry](#) for students who do not have access to enough to eat. The pantry provides food for students for free by storing donated and wholesale purchased bulk foods. We want to create a system to manage the inventory of a food pantry, as well as generate reports about the pantry's activities. We need to design a website that manages the information. Use the following information to guide your design and implementation:

Items

The pantry stores a variety of different foods, but will only keep track of food (no drinks, or other items that you do not eat that might be at a grocery store). Many packaged goods come with a [UPC](#) code while produce has [PLU](#) codes. Likewise, some item inventory can be monitored by counting the number (e.g. number of soup cans) while some items should be measured by weight (e.g. bulk rice or beans). It is fair to assume that when a student gets an item that is counted, they will take the whole item, but they may only take a portion (e.g. 2 lbs of bananas) of weighed goods.

Inventory

All items should be tracked for when the food pantry receives them, when they will expire, and when they are checked out by a student. At any given time, we should be able to know what foods are currently available and the quantity available.

Check Out

Students will check out items by visiting the food pantry in person, selecting items, and then checking out with a food pantry staff member. Food is free, but the staff member will use the system to keep track of the inventory by identifying what each student checks out, including the quantity. To protect students' privacy, their names should not be stored in the system. Instead, a checkout should identify a student ID number (a 9-digit number, usually starting with zeros, that is unique to each student already).

Provider

Individuals and organizations are encouraged to donate goods to the food pantry but sometimes the pantry purchases discount food as well. When the pantry receives new food, a staff member should record the new items in the inventory as well as where the items came from. This should also keep track of whether the goods were donated or purchased (and if purchased, how much the pantry spent on it). Donors are sometimes individuals (e.g. a community member) but sometimes donations are made from organizations (e.g. a restaurant, farm, or grocery store). The system should be able to record who the provider was and account for whether it is a person or an organization.

In addition, the system should keep track of all the donations a provider has made. This should include both how many times they have donated as well as the quantities of donations. However, some donors wish to remain anonymous so there should be an option to keep track of all anonymous donations separately from those who identify themselves.

Reducing Waste

When food expires, it is not safe for distribution and it is thrown out. However, the pantry wants to maintain efficiency so each day, there should be a report generated to show the staff which items are expiring within the next 2 days. By looking at the report, the staff will know which items should be advertised and given out before they go bad. The report should also show what foods are expired and need to be thrown out. The system should allow staff members to indicate that they have disposed of an item (including quantity). For example, the pantry might have 100 lbs of bananas but 10 lbs expired so they threw out just those 10 lbs.

Measuring Impact

The food pantry also needs to secure support and funding so they need to collect evidence of their impact. On demand, they should be able to generate a report that summarizes (A) the total amount of food donated [measured by number of packaged items and total weight of weighed goods] (B) the total amount of food checked out by students (C) the total number of different students who have checked food out, and (D) how many checkouts there have been