

Salem Harvest Information Management

This document is intended for anyone who is interested in the system that Salem Harvest uses to manage information. With only a small, all-volunteer staff, the task of planning and carrying out more than 100 harvests in a four month season and drawing on 3000 volunteers to pick 165,000 pounds of food can be accomplished only by relying heavily on a web-based system for managing information. To this end, the system from crop and volunteer registration, to harvest planning, to roster management is designed to minimize the manual manipulation of data. Processes are automated and integrated wherever possible.

While the features of the system described here could be emulated by other organizations, there is also the possibility of directly adapting the database structure and supporting web pages for their use. Salem Harvest supports the efforts of organizations with goals that are similar to ours and we may be able to help with information management, an essential function in efficiently coordinating large numbers of volunteers and events. Any inquiries about these possibilities, or other questions that you may have about the system, should be directed to Dick Yates at dyates@salemharvest.org.

While this description will try to avoid being overly technical, some familiarity with web sites and databases may be useful.

The sequence of events

Understanding the database structure and function requires first reviewing the sequence of events within Salem Harvest's particular system for managing harvests. While some of these events are idiosyncratic to Salem Harvest's system, the underlying database system could, with modification, be implemented in other ways.

Crop owners register crops through the public website page or by telephone, in which case the information is also entered using the web page form. The form can be seen at: www.salemharvest.org/crop_registration.php. The crop registration triggers an email to the harvest directors and the database manager. Harvests directors have primary responsibility for planning and implementing harvests. There are a Farm Harvest Director and a Backyard Harvest Director. It is decided whether the crop is a farm or backyard crop and this detail is added to the database record for the crop. The crop owner is contacted and a time is arranged to scout the property. Additional information necessary to plan the harvest is gathered then and added to the database record for that crop. The owner signs a Limited Entry Authorization form allowing Salem Harvest to go on the property and harvest the produce and plans for the harvest are made with the owner. From the harvest plans - including the date, time, number of pickers and harvest leader - a new harvest of that crop is added to the harvests list by the database manager or harvest director.

Volunteers ('pickers') register on the website at this page: www.salemharvest.org/pickerinsert.php. They must check off a terms of participation agreement. They receive an email with links to information that they need to participate at harvests. Registered volunteers can go to the Volunteer page [www.salemharvest.org/PickersInfo.html] of the website to: update contact information, request an automatically generated copy of their attendance history, request to be re-sent the information for harvests that they have signed up for, take a ladder safety test, or read the terms of participation.

When the details of a harvest have been set and it is ready for public sign up, it is posted on the Harvests page [www.salemharvest.org/harvestlist.php]. This listing has only a brief description of the harvest: date and time, what crop, general location, and number of pickers needed.

For large harvests – usually 50 or more pickers – a bulk email notification is sent to all registered volunteers through an external web-based service. This service allows direct connection to the Salem Harvest site so that the text of the email and the current list of email recipients can be uploaded and sent automatically.

Volunteers sign up for specific harvests on the Harvests page. They must check off a box indicating agreement with the terms of a Liability Waiver. They can also indicate if they are available to help the harvest leader at the harvest. The sign up name is automatically checked against the table of registered volunteers. If registered, the person is added to the roster for that harvest. They are then sent to another page that contains details such as the exact address, driving directions, and instructions specific to that harvest. This information is drawn from the harvests table in the database.

If the harvest roster is full, pickers can request, on the Harvests page, to be added to a waiting list. An email is automatically sent to them that requires them to click a link to confirm the request for the waiting list. If they do that, they are added to the roster with a status of 'waiting.' Pickers on the waiting list can check their position on the list using a link sent to them in the email.

After signing up for a harvest, pickers receive an email with details about the harvest, and a link back to the page they saw when they signed up. The email also has a link that they can use to cancel their roster spot allowing someone else to attend instead. When they cancel, the top person on the waiting list is automatically promoted to the active roster and sent an email notifying them.

On the day of the harvest, the roster is printed and attendance marked on it as pickers check in. The harvest leader returns the roster (and other forms) to the database manager who then enters the attendance information into the database. A custom utility makes entry of attendance information very quick with a single keystroke for each name. Other information is added to the record for that harvest: donated weight, total weight, and where the food was donated.

When harvests are completed a tax donation receipt, and matching envelope, can be generated as pdf documents that merge in the donor's address and all other necessary information about the harvest.

Database structure

The database is just a collection of lists called 'database tables.' Various web pages add information to these tables, update it, and pull information from the lists and combine it to display in reports or web pages. Because the database tables are all linked through primary and secondary keys, reports can be easily generated that correlate information in about any way imaginable. We can quickly determine something as useful as the average number of pounds harvested, per picker, for a particular pear orchard, or as obscure as the average distance traveled by pickers to blueberry harvests in July of 2010 (4.75 miles).

There are only five main tables, and about 15 other, minor ones. The five main database tables are:

Trees: The list of all the crops that have been registered. Each line in the table has the owner's name and contact information, the address, type of crop, etc. (The term 'trees' is a historical artifact that is just the name of the table, but it contains all crops, whether or not they are trees.)

Pickers: A list of all the people who have registered as volunteers/pickers. This includes information such as: name and contact information, interest in leading or assisting, computer IP address, ladder safety test score, etc.

Harvests: A list of all the harvest sessions. Information includes, among other things, the particular crop to be harvested (this is a number that refers to the crops list), the harvest date and time, harvest leaders (these are numbers that refer to the Pickers list), how many pickers are to be on the roster, the weight of the produce that was picked, and information to be displayed when the harvest is posted.

Rosters: This is a list of all the roster slots for all harvests. Some of the information in this list refers back to the Pickers and Harvests tables: the harvest number, the picker number, picker name, attendance at that harvest, and computer IP address.

Users: The usernames, passwords, access level and some page preferences for authorized users of the database. The access levels are: All (no limits), Change (can view and change information but usually not delete anything), and View (can only view information, not change it). Restricted web pages check for the access level of the person logged who is on before showing the page.

Many web pages, for staff use only, draw directly on the database to help streamline and integrate operations. There is a custom **eMailer** page that can draw lists of email

recipients directly from any of the database tables. This means, for instance, that all the volunteers who have signed up to assist at a harvest can be sent individualized or group email with assignments before the harvest, or that a request can be sent to all approved truck drivers to see who is available on a given day. The **Season Planner** displays all harvests in either calendar or list view with links for viewing and updating crop or harvest information. A **Reports Generator** supports custom queries of the database and includes an extensive list of previously written report queries.

The database tables are in mysql format and the web pages that connect to the tables and manipulate their data use the language php. This php/mysql combination is almost universally supported by domain hosts and the server and installation programs for writing and testing pages are free. The tables are linked through primary and secondary keys so that information can be extracted from the database and combined in any way that is useful. For instance, as a whimsical example, one could link the pickers, trees, harvests and rosters tables to get an estimate of the total number pounds of blueberries that pickers named Tom had picked in the month of July.

Information cannot pick crops, but the multitude of decisions that people make to harvest food that would otherwise go to waste are best made with a firm foundation in reliable data and an accurate record of progress.