CS 373 Group 14 -
Central Valley Farm Aid
Phase 1 Technical Report

About

Rural and small family farmers inherently face many threats to the viability of their establishments, ranging anywhere from infrastructure to financial constraints. Our website helps rural farmers in the Central Valley region of California identify where they can sell their crops in farmers' markets based on their location. It also shows them what non-profit organizations can provide assistance based on their location.

Questions we want to help answer:

1. Where can rural and small family farmers go to sell their products in nearby farmers' markets?
2. What non-profit organizations can help rural and small family farmers sell their products based on location?
3. How can the farmers get started or receive assistance in selling their crops?

Tech Stack

- Frontend - ReactJS, Bootstrap
- Backend - Python with Flask
- Postman - API Documentation
- GitLab Git - code control
- Namecheap - A website that gives students free .me domains.
- AWS - hosting our server on EC2 instances

Models

Location (counties and cities)

~50 counties in California from whom we can gather farming, agricultural market, and non-profit data. Included data points:

1. Number/variety of crops sold
2. Crops that are grown in the region
3. Climate
4. Name
5. Non-profits in the region
6. Number of markets in the region
7. The volume of agricultural production

Non-profits

~150 in California specialize in helping the agricultural industry, with a focus on local businesses.

1. Location
2. Specializations (grants, infrastructure, materials)
3. Name of organization
4. Logo
5. Contact info
6. Mission statement
7. Fees of service (free, low-cost, or some other value)

Farmers' markets

~400 Farmers' markets are held across California on which we can gather information and connect to non-profits.

1. Location
2. Hours of operation
3. Name
4. Produce offered
5. Non-profits connected
6. Contact info
7. Description

Data sources

https://www.usdalocalfoodportal.com/fe/fregisterpublicapi/

https://charityapi.orghunter.com

https://quickstats.nass.usda.gov/

https://developers.google.com/maps/

Backend API Documentation: Postman

Hosting URL: http://ruralfarmaid.me/

- Acquired from *Namecheap*

All URL calls are defined in the Postman Documentation.
This API is utilized to securely connect the backend of the Rural Farm Aid (Group 14) project to the front end by setting up API calls that the front end can call to collect information to display on the website. Find the GitLab repo here.

Backend: The backend will be parsing information from several APIs to gather and process data regarding Farmers' Markets, Locations, and Nonprofits.

- https://www.usdalocalfoodportal.com/fe/fregisterpublicapi/
- https://charityapi.orghunter.com
- https://quickstats.nass.usda.gov/
- https://developers.google.com/maps/

This is an initial documentation of the project as it is in its early stages. It has not been implemented yet on the server so the queries will not yield anything. However, we have detailed information on the path variables, the purpose of the calls, and more in Postman.

Todo in the future: As the project matures it would be beneficial to include examples of API call returns. There are testing functionalities on Postman as well that can be used once the API is implemented.

Frontend

Frontend: The frontend is running a ReactJS app that currently only has 14 pages: the home page, about page, pages for each model, and 3 instances for each model. We are using

react-bootstrap for components such as the NavBar and Cards. We used react-router-dom to connect our pages on react with a URL path.

We structured the front like this:

src/
components/
pages/
utils/
…

The components folder holds files for all the reusable components. An example of a reusable component is the card for all the team members. You can iterate through an array of member objects and pass each member into the component for it to display a card of the team member with their respective data.

The pages directory has all the pages associated with a route, such as “url/” for home, “url/about” for about, etc.

The utils folder holds any classes for utility. We currently only have a utility class for GitLab API calls, but we might also add API calls to our backend here.

User Stories

Markets Near My Location

This user story is asking to be able to view markets that are near the user. This will be a dynamic attribute that we can filter so it will be in a later phase.

Participate in Markets

This user story is asking for a way to be able to register at a farmers market. Our instance of farmer’s markets includes contact information such as email, phone numbers, and URLs, so it is (technically) already implemented.

Local Farming Laws

This user story wanted to know the local laws of each region to find out the pesticide and GMO usage in farms in that region (???). This user story is out of scope and not from the perspective of our target audience. It provides no help to our target audience so we will not be implementing it.

Markets In Most Need of Support

This user story is also from the perspective of someone wanting to buy produce from a farmers' market and not our target audience of farmers. Despite this, it might be possible to find this information later by sorting farmers' markets by the number of vendors (which might not be correlated to needing aid).

Immigrant Ran Markets

This user story asks to be able to search what markets are run by certain immigrants. Since farmers' markets are run by multiple people, this data most likely does not exist. We can, however, search the name and description of farmers' markets for keywords, so we have asked them for a list of types of immigrants that they would like to search for. They have not responded yet.