ITWS-4500-Cheerios Project Proposal

Johnny Chen, Ishneet Kaur, Heman Kolla

Dr. Callahan

21 January 2025

Project Proposal: Dirt & Deeds

Project Summary:

Dirt & Deeds is a site directed towards community gardens that allows for their maintainers to foster a community around their gardens by connecting them with volunteers, food banks, and other collaborators. The site will allow for users to donate and learn more about gardens that are near them on a map through interactive pins and discussion forms revolving around anything plant related. There are also resources and informational pages for those who want to know more about specific types of plants and/or grow their own plants.

User Personas & Stakeholders:

One of the three biggest stakeholders in our app would definitely be food banks. Food banks can source their fresh and local produce through community gardens that are maintained by staff. It allows them to offer a more fresh and diverse selection of food to those who really need it. Additionally, volunteers are also stakeholders in the community garden as these are people who want to contribute their time to really nurturing the garden. Finally, the garden owners will play an important role in our app as they are allowed more permissions than the average user so that they can promote their gardens to people who are potentially interested in joining their cause.

Food Bank G : Food Bank G has been struggling with providing their services to the people in need in the local area. They lack a reliable source of freshly maintained food that is inexpensive to provide in abundance to the people.

Mark, 16 (highschool student, needs volunteer hours for organization or something) : Mark is a highschool student who is currently in an honors society organization that requires him to reach a certain amount of volunteer hours per week. Mark wants to find a volunteer position that makes an impact on his local community and requires a lot of hands-on work. He stumbles across a community garden in his area but there is no indication of anyone there to ask for volunteer positions.

Chloe, 37 : Chloe is a part-time worker at a startup tech company as a lead designer. She currently lives in Albany but as the rent in New York gets higher, she has been working up a lot of stress at her job. She wants to find a hobby that is relaxing but also takes advantage of her "work mood" after her job.

Intended Technologies:

We intend to use the MERN Stack (Mongo, Express, React, Node) and the Trefle API for this project. The Trefle API is an open, freely accessible REST API with tons of botanical data ranging from their family names and trees to their original authors. It is also returned in a JSON format which is nice and handy when it comes to database and backend integration. We will likely be using the OpenStreetMaps API or a related one to functionally implement the map feature.

Functional Requirements:

Integrated Map with Pins
The first step to fostering a community is to let the user know what community is out there in this region. For that reason, we are going to have a page solely dedicated to displaying community gardens in the regions by pinning them to the map. Using a pin makes it an easy place to click and display basic information about the location. This will help us create a volunteer sign up feature dedicated to each location. This should ideally extend to a filter for gardens as well as a search feature to find a particular garden on the map.

User Authentication

Users will be able to create accounts and sign in to them using their username and password. This way, they can always check to see what they have signed up for in the past and are planning to go to. Additionally, this allows for identification in the discussion forum feature and identification for community garden owners to know who is volunteering for them. Some users will also own their own community garden. Such users will require a new user type to allow them to post volunteer requests or place their garden as a pin on the map feature.

Plant Info Page

Users should be able to search for information about plants they like. This page will serve as an encyclopedia. At the minimum, we expect this plant encyclopedia to include all plants found at the community gardens (tagged as such) if we can discover that information. Ideally, this will extend to all other plants.

Volunteer Sign-Up

We are not a solely informational site. As such, the user should be able to do more than simply learn about their community, but actually be able to contribute to its growth. The main way that most community gardens do this is by allowing volunteers to sign up. This feature should act as a way to enable users to do just that. On a profile page, past volunteering experiences and currently signed up volunteering experiences should be displayed. Note that users should be able to sign up from the map feature as well as a discussion forum post.

Resources Page

Community gardens typically deliver their produce to a nearby food bank. Food banks run on the good nature of others who contribute to their well-being. These pages would provide resources on how to do so, such as with a financial donation link. This would redirect them to a local food bank's site to donate. Additional resources would be provided for general tips on owning/running a community garden.

Nonfunctional Requirements:

Discussion Forum

Users should be able to discuss with other community garden enthusiasts, whether it be to post questions, share tips/advice, or report issues. For users who are garden owners, this will enable them to make posts or announcements about times they may volunteer for. This should ideally extend to having posts be tagged with a topic, allowing for a search feature to find a particular post. As a far stretch goal, we would want this to be moderated for inappropriate content before a draft post is "published" to the forum.

User Post History

First, note that this is not related to volunteering history on the profile page, which is listed among the functional requirements. This refers to users being able to keep track of what they have posted in the discussion forum. This functions to emulate most social media platforms to keep a track of what content they have published.

Real Time Messaging (stretch)

Sharing tips and advice is something that can be done on the forum. But, real time communication for, say coordinating times to volunteer or open garden shows, cannot be done there. For this, users would require a separate, direct-messaging feature.

Google Calendar Integration (stretch)

A user would only be able to volunteer if they are free. To check for scheduling conflicts, integration with Google Calendar would be perfect. This is for practicality. This also helps make our site more convenient as we could be able to export times selected to be a volunteer to a new Google Calendar.

Projected Project Schedule:

Sprint 1 (Now-Feb11)

Currently, as we are doing this proposal, we are planning the features this application should have. This includes both mandatory functional components and stretch nonfunctional components. With that complete, we will design and wireframe the front-end. Immediately following the proposal presentation, we will begin our scrum meetings on a Mon/Thu schedule. It is in this first meeting that GitHub projects will be made for each sprint, and a method for documenting branches and issues will be settled on. The remainder of this time (the larger portion) will be to complete a significant chunk of the front end. This extends to all pages being created, integration of the map API for the map page, and user authentication (the only backend goal). For authentication, a temporary JSON will be used as MongoDB will not have been covered yet.
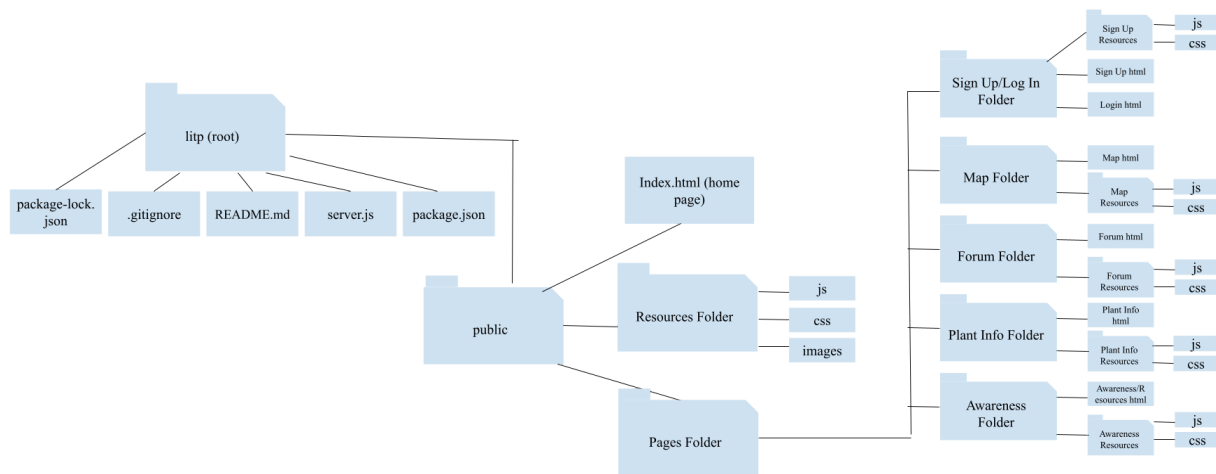
Sprint 2 (Feb11-Mar11)

This sprint is when all front-end implementation will be completed as we expect the midterm presentation to fall within a few weeks of this sprint starting. This means the map API will have to be fully integrated. From here, we will shift focus into our back-end. This covers what we need to do with MongoDB (shifting our user authentication here) and also the implementation of the plant API for the catalog feature. Integration of these two should be done immediately.
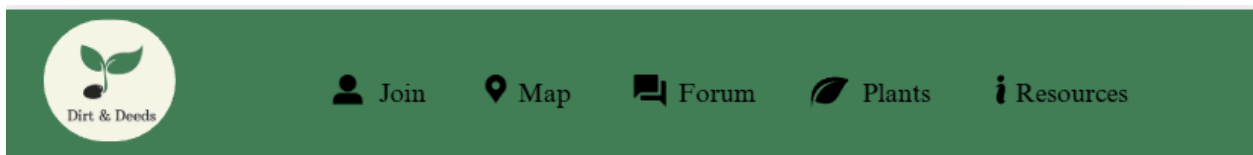
Sprint 3(Mar11-Apr15)

This final sprint covers what we learned in the last bits of the previous semester—the security features and Morville's Honeycomb. Here, we plan to be focusing on accessibility, but will take care of anything as it arises. At this point, we have to wrap up backend integration. This leaves us with a functional prototype that is going under final adjustments. This is when we plan to reach out and communicate to local community gardens to collect user feedback. If able, we will act on it. One such place is the hydroponics facility on campus (known to accept volunteers). Lastly, we will wrap up with any documentation and create and upload our final presentation.

Sitemap:

Wireframes:

Dirt & Deeds