CS 492 - Project Proposal

Team Members

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Description

We are using the USDA plant API to allow users to look through, search, identify, and share their favorite plants with others. Our main activity displays two categories, which allow a user to to either search for a plant or look for plant based on their map location. Clicking on a search button navigates a user to the *Search Plants* activity, containing a list of plants and also a search box. Searching or clicking on a specific plant in the list of plants navigates to plant-specific details activity. Plant details include plant picture, common and scientific names, classification tree, toxicity, and more. The details activity also includes two buttons; the first button allows a user to share the plant link with others, and the second button allows a user to view the plant on the USDA plant website. Alternatively, from the *Main Activity*, a user can click on the *Identity by Map* button, which navigates the user to *Plant Index* activity. By clicking on the region within the map, a user is then navigated to secondary plant Index activity, which displays all the plants in the region. By clicking on the specific plant within the plant index, the user is then navigated to the plant details activity. To summarize, we provide two ways for a user to reach plant details.

Main activity:
The main activity is a menu that allows the user to either go to the "search plants" activity or the "identify plant" activity.

Search plants activity:
The search plants activity lists all of the plants in the database. It includes a search bar which users can use to search for a specific plants name. Selecting a plant brings the user to the details activity for that plant.

Details activity:
This activity shows detailed information about a specific plant. It includes a photo if available, the common and scientific name of the plant, and additional information.
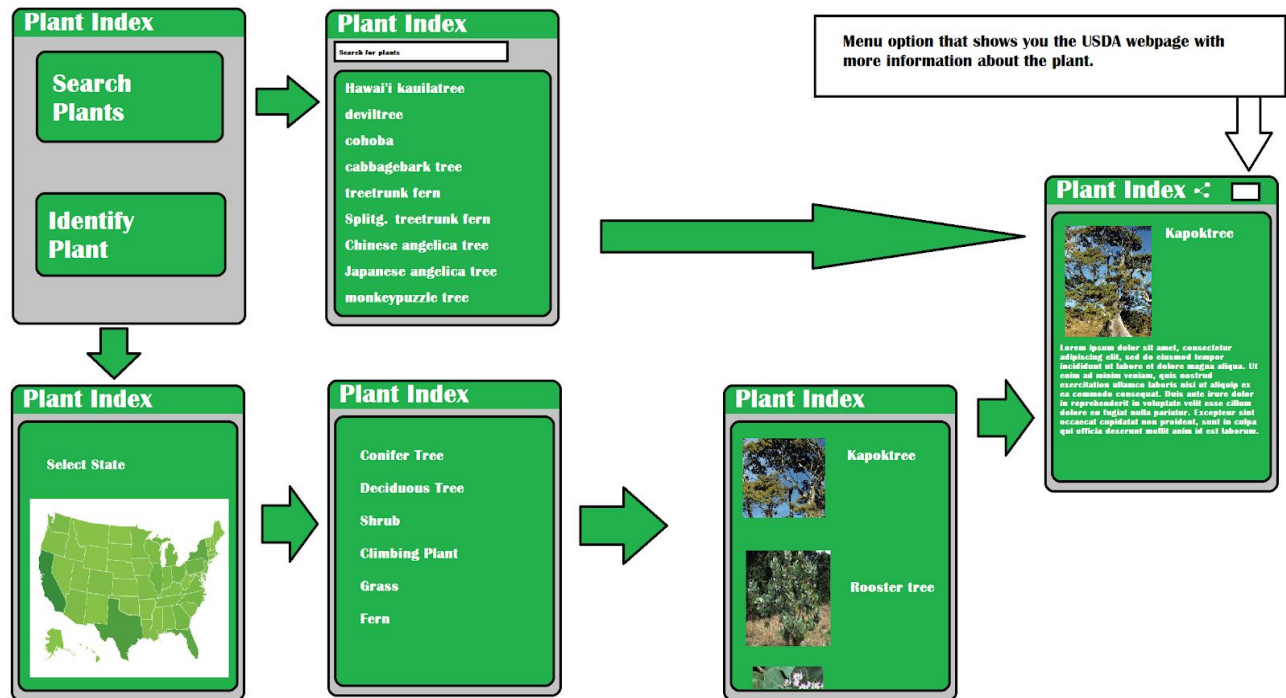Users have the option to share this plants with others, or to go to the USDA webpage that has more information about the plant.

Identify plant activity:
This activity may actually be split into many activities (e.g. id_plant_1, id_plant_2).
Each activity asks the user to give descriptive information about the plant to reduce the number of possible plants that could fit the description. For example, the first activity may ask the user the geographical location of the plant, then the next activity may ask the user if the plant is a tree, bush, etc… This will eventually lead to the details activity for a specific plant.

Mock-up

API Specific Methods

- An explanation of the specific API methods you will use in your app and a description of how that data from those methods will be used in your app or what data will be sent from your app to the API.

The following section outlines API specific methods used for querying categories, plants, and plant details.

API Method for Searching Plants Common Name Index:

- https://plantsdb.xyz/search?fields=Common_Name&limit=5000
- https://plantsdb.xyz/search?fields=Common_Name&limit=5000&offset=5000

Users will be able to search for plants via a list of plant common names in the "Search Plants" activity. The list of plant common names will be generated via the above API method. The API can only return up to 5000 records at once. Given that there are more than 5000 plant records in the database, the offset parameter will need to be used to to obtain all of the plant records.

API Method for Plant Common Name Index by State and Province (ex: Oregon):

- https://plantsdb.xyz/search?State_and_Province=USA%20(OR)&fields=Common_Name&limit=5000
- https://plantsdb.xyz/search?State_and_Province=USA%20(OR)&fields=Common_Name&limit=5000&offset=5000

Users will be able to search to identify plants by state and province via a list of plant common names in the "Identify Plants" activity. The list of plant common names by state will be generated via the above API method. Similar to the "Search Plants" activity, there are generally more than 5000 plant records in the database for each respective state, therefore the offset parameter will need to be used to to obtain all of the plant records.

API Method for Plant Detail by Common Name (ex: Malheur Valley fiddleneck):

- https://plantsdb.xyz/search?Common_Name=Malheur%20Valley%20fiddleneck&fields=Common_Name,Scientific_Name_x,Symbol,Genus,Species,Subspecies,State_and_Province,Category,Family,Family_Symbol,Family_Common_Name,xOrder,Class,SubClass,SuperDivision,Division,SubDivision,Kingdom,SubKingdom,Duration,Growth_Habit,Invasive,Toxicity

When users select a plant's common name from a list activity, they will navigate to "Plant Detail" activity. The selected plant's details will be generated via the above API method. Relevant query fields for plant details are as follows:

- Common_Name
- Scientific_Name_x
- Symbol
- Genus
- Species
- Subspecies
- State_and_Province
- Category
- Family
- Family_Symbol
- Family_Common_Name
- xOrder
- Class
- SubClass
- SuperDivision
- Division
- SubDivision
- Kingdom
- SubKingdom
- Duration
- Growth_Habit
- Invasive
- Toxicity

API Documentation

USDA API documentation can be found at the following links:

- https://data.nal.usda.gov/dataset/usda-plants-database-api-r
- https://plants.usda.gov/characteristics.html
- https://plants.usda.gov/core/profile?symbol=ASIN