Website Requirements

1. Field Guide Expansion

A major expansion to the existing species field guide, which currently only includes alpine flowers, to include all plant species found at Niwot Ridge.

1.1 As a user I would like to have access to all of the species in the Niwot Ridge area

    1.1.1 The new species will be included in a .CSV file

    1.1.2 The data shall be stored in a MySQL Database

    1.1.3 The entries shall contain images of each plant species

1.2 As a user, I would like to view a list of all species in the Niwot Ridge Area

    1.2.1 The list shall be linked on the navigation bar

    1.2.2 The list shall display the names of all the plant species

    1.2.3 The list shall show thumbnails of each species

    1.2.4 Each item in the list shall be selectable

    1.2.5 Upon selecting a species, the website shall navigate to another page

1.3 As a user, I would like to view more information on each species

    1.3.1 The website shall navigate to a new page upon selection of species

    1.3.2 The page shall display the name of the species

    1.3.3 The page shall display information on the species

    1.3.4 The page shall display a high-resolution image of the species

    1.3.5 The screen shall display a map with the locations of sightings of the species

    1.3.6 The screen shall allow users to navigate to other parts of the website

1.4 As a user I would like each plant species to have tags associated with it

    1.4.1 New tags shall be included in a .CSV file

    1.4.2 The tag information shall be stored in a MySQL database

    1.4.3 Parent family tags shall be included, allowing for refined searching

2. Additional Set of Search Filters

An additional set of search filters so users can quickly find *any species in the new species field guide*

2.1 As a user I want to search for plants by filter
- 2.1.1 The filters shall be included in a .CSV file
- 2.1.2 The filters shall be stored in a MySQL database
- 2.1.3 A filter menu shall be selectable from the browse screen
- 2.1.4 The user shall be able to select one or more filters
- 2.1.5 The list of results shall update with each filter selection
- 2.1.6 The updated list shall only display the flora that satisfy the selected filters
  - 2.1.6.1 If no flora satisfy the filters, "No Flora Found" shall be displayed

2.2 As a user, I would like to be able to select "Exclusive Filters"
- 2.2.1 The exclusive filters shall be included the MySQL database
- 2.2.2 The exclusive filters shall be selectable prior to the selection of other filters
- 2.2.3 The list of filters shall update to only show filters relevant to the selected exclusive filter, after an exclusive filter is selected.

3. GPS Observations

A new option to upload a GPS observation for any of the species in the field guide by users, instead of just the option to upload moss campion observations. A 'researcher verified' function available to public researchers, instead of just the development team, will ensure that the species observations uploaded are either uploaded by researchers themselves or verified by a researcher post-upload.

3.1 As a user, I would like to be able to view my recorded observations

3.1.1 The account page on the website shall display the user's own observations

3.1.2 The website shall pull the user's own observations from the MySQL database

3.1.3 The website shall display a list of observations

3.1.3.1 Each observation shall have a picture

3.1.3.2 Each observation shall have ~~a description~~ user comments

3.1.4 When an observation's photo is clicked, a high-resolution version of the same image shall be displayed ✓

3.1.5 The website shall be able to filter the observations

3.1.6 A map shall be displayed at the bottom to show the locations of all filtered flowers

3.2 As a user, I would like to be able to view other users' submitted observations

3.2.1 The Observations tab shall pull user observation data from the MySQL database

3.2.2 The Observations tab will show photos and the usernames of those who submitted the observations

3.2.3 When an observation is clicked, its high-resolution picture, GPS location on a map, comments, and verification status shall be displayed

3.2.4 The Observations tab shall allow filtering

3.3 As a researcher, I want to be able to view and verify user submitted observations

3.3.1 The account page shall display a Verification tab

3.3.2 The Verification tab shall pull user observation data that have yet to be verified and is not submitted by the current account from the MySQL database

3.3.3 The Verification tab shall show photos and usernames of those who submitted the observations

3.3.4 If an observation is clicked, a high-resolution version of its picture, its GPS location on a map, and any comments it has shall be displayed.

3.3.5 The Verification tab shall allow filtering

3.3.6 Each observation shall have an option to verify as correct or verify as incorrect

3.3.7 The verification status shall be sent and saved to the MySQL database

3.3.8 The observation shall be taken from the list of observations to verify for that researcher

3.4 As a researcher, I want to be able to verify other users as researchers

3.4.1 The account page shall display a Notifications tab

3.4.2 Notifications shall be pushed to notify researchers about a user in need of researcher verification

3.4.3 The Notifications tab shall display standard users wishing to be verified as researchers

3.4.4 A prompt shall be displayed to "Accept" or "Deny" the user as a researcher

3.4.5 The resulting action shall be pushed back to the requesting user

3.5 As a researcher I would like to be able to be verified by other researcher accounts

3.5.1 The account page shall display a Verify Me button

3.5.2 If clicked, a prompt will display witch input fields

3.5.3 The input fields shall ask for credentials pertaining to research group, research, and referenced by

3.5.4 A Submit button shall be displayed at the bottom of the prompt under the input fields.

3.5.5 If clicked, a notification shall be pushed to the researchers/research groups that were given in the input fields

3.5.6 A notification shall be pushed back from selected researchers

3.5.7 A user shall be verified as a researcher after 3 approved notifications are returned

4. Species Distribution Maps

The development of species distribution maps based on *uploaded observations that allows* users to navigate to species of interest with the app.

4.1 As a user, I want to be able to view where specific species *have been located in* the NIWOT area

    4.1.1 The distribution maps shall be accessible from the field guide

    4.1.2 The distribution maps shall be stored in a MySQL database

    4.1.3 The distribution maps shall be updated when a new species *observation is* recorded and the user has internet connectivity

    4.1.4 The distribution maps shall have pinned locations of specific species

        4.1.4.1   Verified species shall be pinned blue

        4.1.4.2   Unverified species shall be pinned red

4.2 As a user, I would like to be able to view all the species that have been located in the Niwot Ridge area
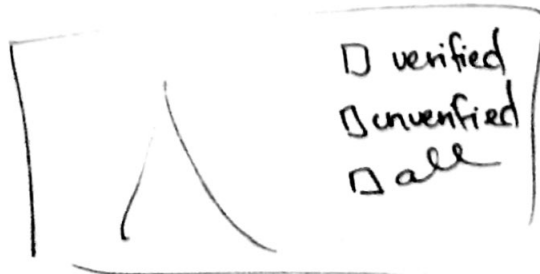
    4.2.1 The distribution maps shall be accessible from the Browse page

    4.2.2 The distribution maps shall be stored in the MySQL database

    4.2.3 The distribution maps shall be updated when a species is located

    4.2.4 The distribution maps shall have pinned locations of specific species

        4.2.4.1   Only species that have been confirmed as verified shall be pinned

5. Use of a Database

The development of a database to store all of the species information, observations, filters, pictures, maps, etc.

  5.1 As a user I would like the database to be accessible from iOS, Android, and web platforms.
  - 5.1.1 The data shall be stored in a central database
  - 5.1.2 Each device shall be able to talk to the central database when connected to the internet
  - 5.1.3 A locally stored database shall allow for access with no internet connectivity

  5.2 As a user, I would like to be able to store data in the database using any supported device
  - 5.2.1 The user's observation shall first be stored locally
  - 5.2.2 When the user's device is connected to the internet, the observation shall be joined in the central database
  - 5.2.3 The observations shall be stored in the observations table, ready to be verified by a researcher
  - 5.2.4 Researchers shall be able to input data from a .CSV file, to expand the plant types and observations in the field guide

  5.3 As a user I would like to be able to request and retrieve data from the database
  - 5.3.1 The user shall be able to request data from the database with internet connectivity
  - 5.3.2 A field guide search request shall search the field guide table and return values that match the given filters
  - 5.3.3 A species observation request shall search the observations table and return all confirmed/unconfirmed observations of the species
  - 5.3.4 A user request shall search the database for user data and return it for use in the account page

6. Account Management

The ability to manage account information from both the app and *the website*.

6.1 As a user, I would like to be able to create an account so I can use *the website*
  6.1.1 The home screen shall have a Log In/Sign Up button
  6.1.2 The website shall navigate to the account creation page when the Sign Up button is pressed
    6.1.2.1 The account creation page shall include username, password, confirm password, and email address fields
    6.1.2.2 The website shall check the database to see if a username is taken and print a message if it is
    6.1.2.3 The website shall check password complexity
    6.1.2.4 The website shall send a confirmation email upon successful account creation
  6.1.3 If all the criteria are met, the database shall create a new entry for the user
  6.1.4 Upon account creation the website shall navigate to an "Account Created" page
6.2 As a user, I would like to be able to sign in to my account
  6.2.1 Pressing the Log In button shall navigate to the log-in page
    6.2.1.1 The log-in page shall display a username/email field and a password field
    6.2.1.2 The text entered in the field shall be searched for in the database
      6.2.1.2.1 If the entry doesn't exist, the website will display a failed log-in message
      6.2.1.2.2 If the entry exists, the website shall log the user in
  6.2.2 Successful log-in shall navigate to the account page
6.3 As a researcher, I would like to be able to create an account
  6.3.1 If the Sign In/Sign Up button is clicked, the page will navigate to the Sign In/Sign Up page
  6.3.2 The input fields shall be displayed under Log In/Sign Up
  6.3.3 If the Sign Up button is clicked, a prompt will display if the input credentials are invalid

6.3.4 If the input credentials are valid, an account will be created and logged in

6.4 As a user, I would like to be able to reset my password if I forget it

    6.4.1 Pressing the Forgot Password link shall navigate to the Forgot Password page

        6.4.1.1 The Forgot Password page shall display an email field

    6.4.2 The text entered in the field shall be searched in the database

        6.4.2.1 If the entry exists, an email shall be sent with a new password

        6.4.2.2 If the entry doesn't exist, an invalid email message shall display

    6.4.3 Pressing the change password button shall navigate to the Change Password page

        6.4.3.1 The Change Password page shall display old password, new password, and confirm new password fields

        6.4.3.2 If the old password is valid, and the new password fields match, the password shall be updated in the database

Sign: _D. Award_   Date: 10/18/16