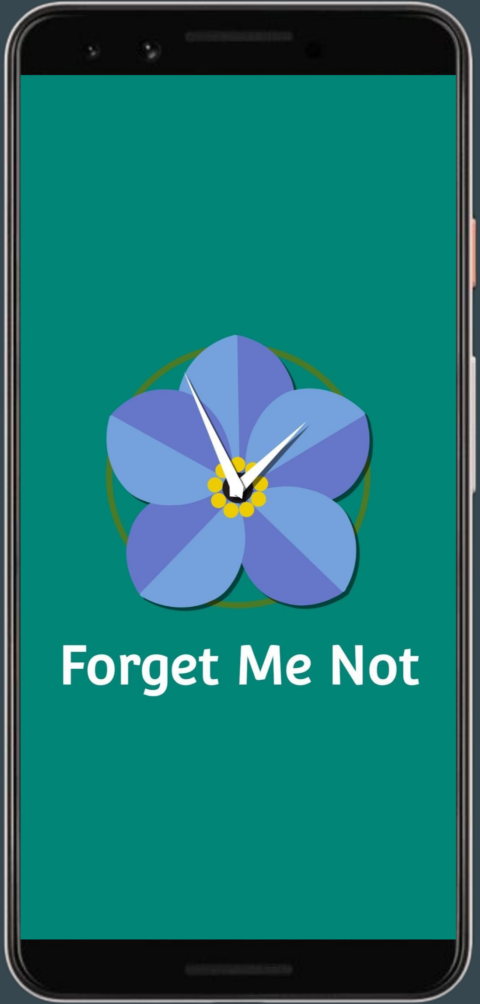
“Forget Me Not”

A gardening companion application.

Our Goals With This App



With this application, we aim to create an interactive framework that users can use to manage their own personal garden. The application:

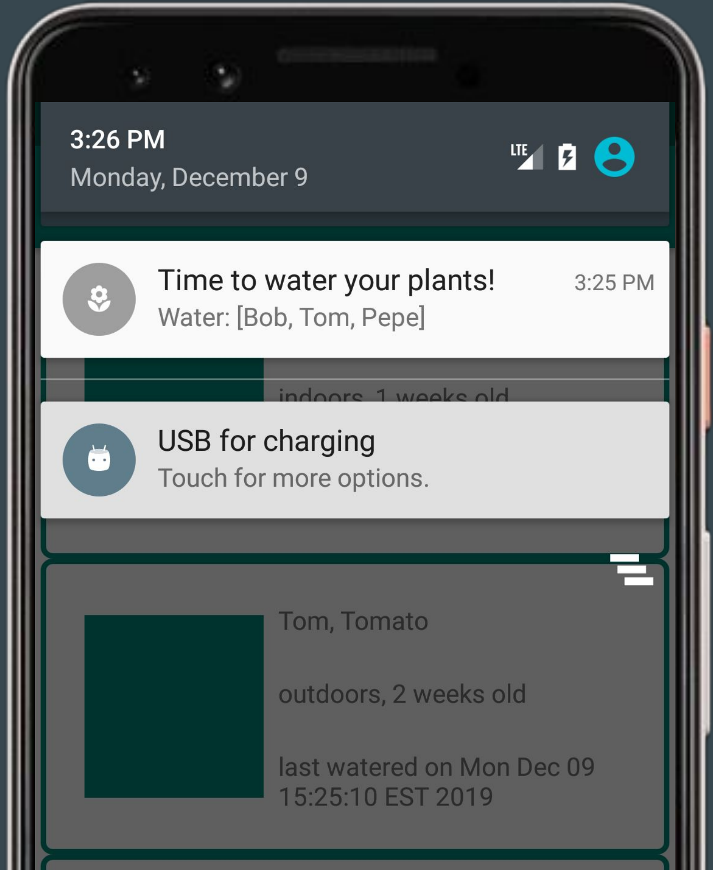
1. Allows users to insert each of their garden plants into a database
2. Allows users to link and view images of their plants
3. Notifies the user with reminders regarding when it is time to care for their plants
4. Connects to the OpenWeather API to warn the user about incoming harmful weather
5. Gamifies the gardening experience with badges and points, incentivizing the users to continue

Features

Notifications (Weather & Plant Care)

The application sends notifications to the user to remind them that it is time to water their plants. Then the user can go into the app and confirm that they successfully watered their plants within the Plant Dashboard. This will automatically give the user points (to be discussed later).

It also sends a notification that is prompted by hazardous weather conditions that serves to remind the user that they need to bring their outdoor plants indoors.



3:26 PM
Monday, December 9

Time to water your plants! 3:25 PM
Water: [Bob, Tom, Pepe]

indoors, 1 weeks old

USB for charging
Touch for more options.

Tom, Tomato

outdoors, 2 weeks old

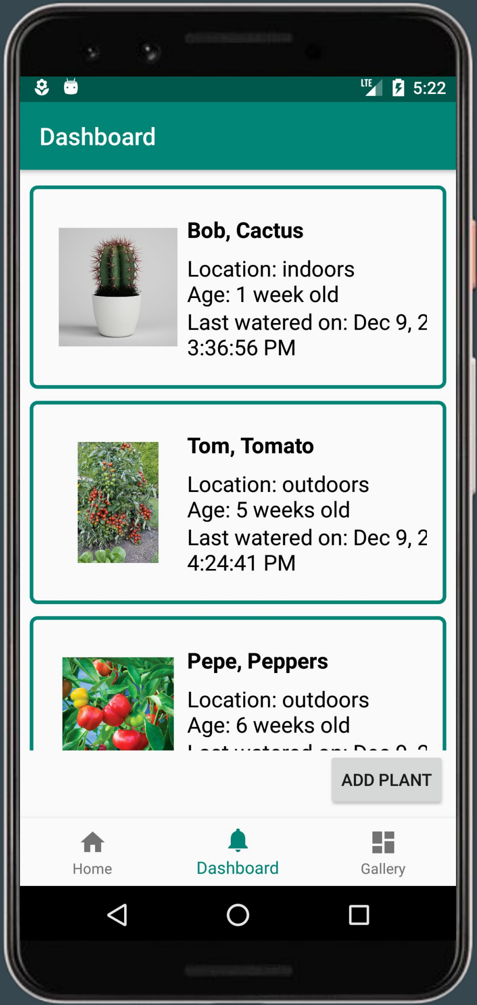
last watered on Mon Dec 09 15:25:10 EST 2019

Plant Dashboard

The application allows users to see their collection of plants all in one place.

Users can scroll through their plants and see the corresponding information (name, type, location, age, and the date they were last watered). Users can also add more plants with the "Add Plant" feature.

Long clicking the plant will indicate that the user has watered the plant and will update the last watered time accordingly.



5:22

Dashboard

Bob, Cactus

Location: indoors
Age: 1 week old
Last watered on: Dec 9, 2
3:36:56 PM

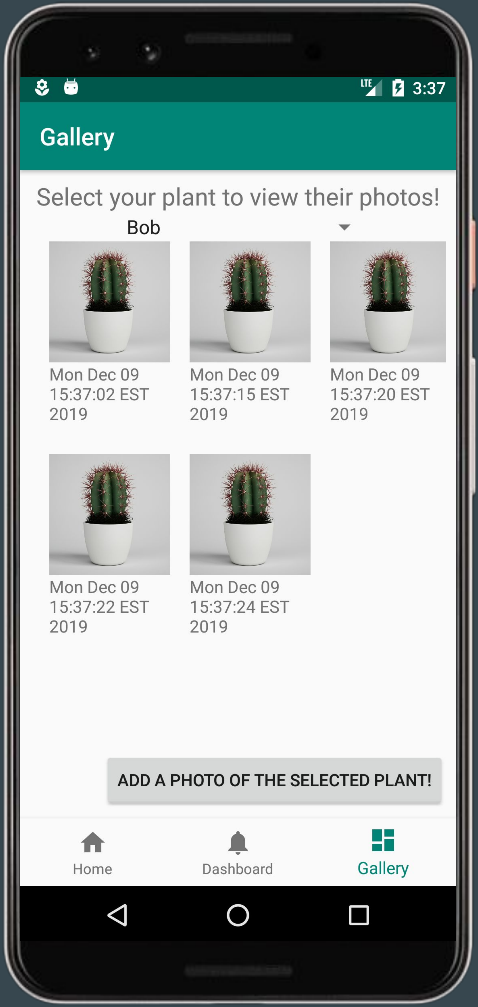
Tom, Tomato

Location: outdoors
Age: 5 weeks old
Last watered on: Dec 9, 2
4:24:41 PM

Pepe, Peppers

Location: outdoors
Age: 6 weeks old
Last watered on: Dec 9, 2

Plant Image Gallery



Select your plant to view their photos!

Bob

Mon Dec 09 15:37:02 EST 2019

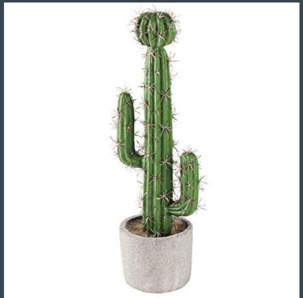
Mon Dec 09 15:37:15 EST 2019

Mon Dec 09 15:37:20 EST 2019

Mon Dec 09 15:37:22 EST 2019

Mon Dec 09 15:37:24 EST 2019

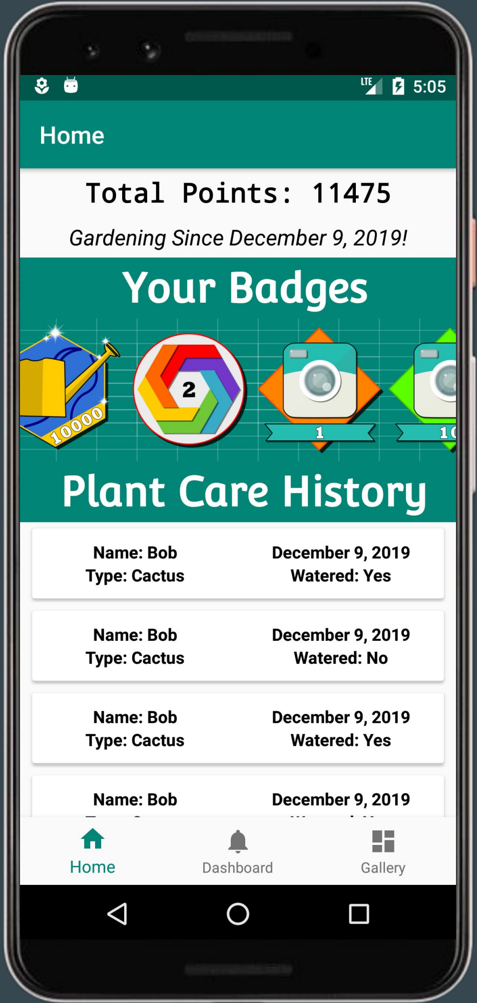
The application provides the user with a gallery function that allows the user to select one of their plants by name and display all of their images of that plant. The user can also use the gallery to link photos on their phone to their plants for easy access later.



Gamification with Badges & Points

As learned in class, gamification is a great way to drive user engagement and draw new users towards your application. Our implementation focuses upon the innate human joy found in collecting shiny trinkets.

These badges were custom made for the purposes of this application. The badges fall under these 5 categories: Consistency, Diversity, Photographer, Green Thumb, & Badge of Badges.



Total Points: 11475

Gardening Since December 9, 2019!

Your Badges

Plant Care History

Name: Bob
Type: Cactus
December 9, 2019
Watered: Yes

Name: Bob
Type: Cactus
December 9, 2019
Watered: No

Name: Bob
Type: Cactus
December 9, 2019
Watered: Yes

Name: Bob
December 9, 2019

1
10
100
1000
10000

Consistency

Diversity

1
10
100
1000
10000

Photographer

1
10
100
1k
10k

Green Thumb

Badge of Badges

Challenges

Background Services

We used a background service to check the weather and send notifications that runs every hour. We had to learn how to set up, start, and restart the service.

NotificationService:

1. Checks the last watered dates of the plants compared to current date
2. Sends a notification of the names of the plants that need to be watered
3. Connects to the OpenWeather API and received the weather based on the current location
4. Sends a notification to move outdoor plants inside if the temperature is too low

This service runs in the background and runs every hour.

SQLite Database

We had to create and then debug a lot of functionalities of the databases used in this project. The tables we made are:

1. User: stores badges, points, and location of the user
2. Plant: stores plant information (name, age, type, etc)
3. Care: stores the times of water to be displayed in the history section of home
4. Image: stores images from the gallery that is tied to the plant id in Plant

We had to implement functionalities to read, insert, delete, and update entries in each of these four tables.

Storing images required converting the image file to bitmap.

Restrictions On Original Implementation

Unfortunately due to the API restrictions (maximum API level 23), we could not implement more complicated APIs and features.

We originally intended on using augmented reality (AR) to show the user what a specific type of plant would look like in their home or out in their garden. To implement AR. the minimum API level needs to be 24.

Another feature we could not implement was a social media platform would connect users together. We were not able to implement a centralized server/database for multiple users, so we decided to make a local gallery instead for image storing.

Mobile App Engineering - Group #1

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Source Code: https://github.com/MobileAppEngg-Group1-Fall2019