

Plant Parenthood

Our goal is to provide education and assistance for basic home plant-care.



Plant Parenthood Team



Max Frisch

Phone: (513) 706 – 2507

Email: frischmf@mail.uc.edu



Rachael Chandler

Phone: (937) 789 – 7032

Email: chandlra@mail.uc.edu



Prof. James Hansel

Phone: (513) 203 – 7604

Email: hanselj@greatoaks.com

Project Description

Plants can be difficult to take care of - they require consistent attention, different species need different care, and unless you are familiar with plants you may not know what it is that a plant needs to be healthy or what is lacking in the care you provide.

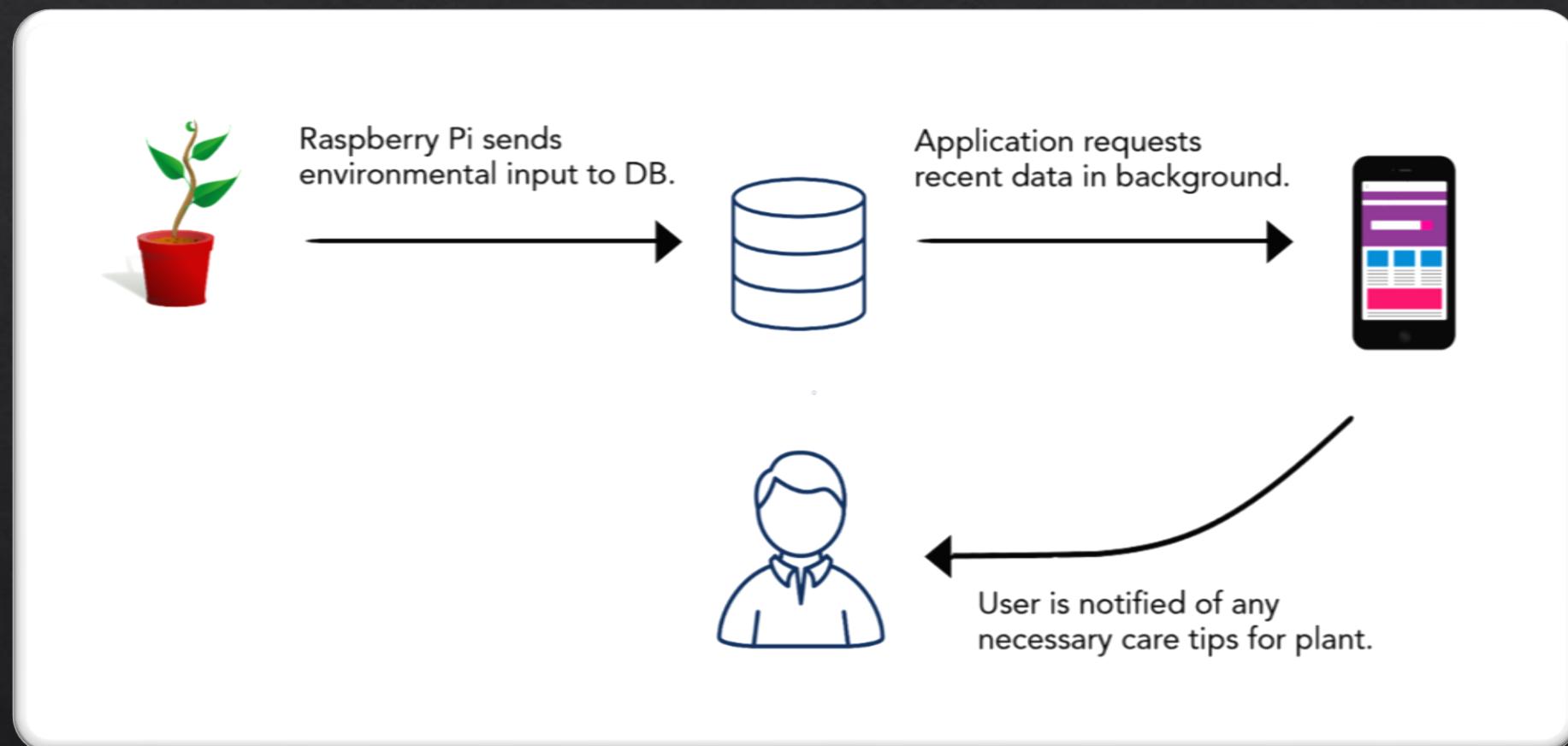
We seek to create a holistic solution to this problem, by creating an interactive system that supplements the caretaking process and provides helpful insight to improve the health of your plant.

We aim to monitor plant health and provide the plant-owner with relevant caretaking information. This will be accomplished using a Raspberry Pi to measure different metrics related to plant health (exposure to light, rhizosphere moisture level, pH, and relative humidity), and then will be analyzed to provide the user with helpful feedback regarding plant health and advice for future care.

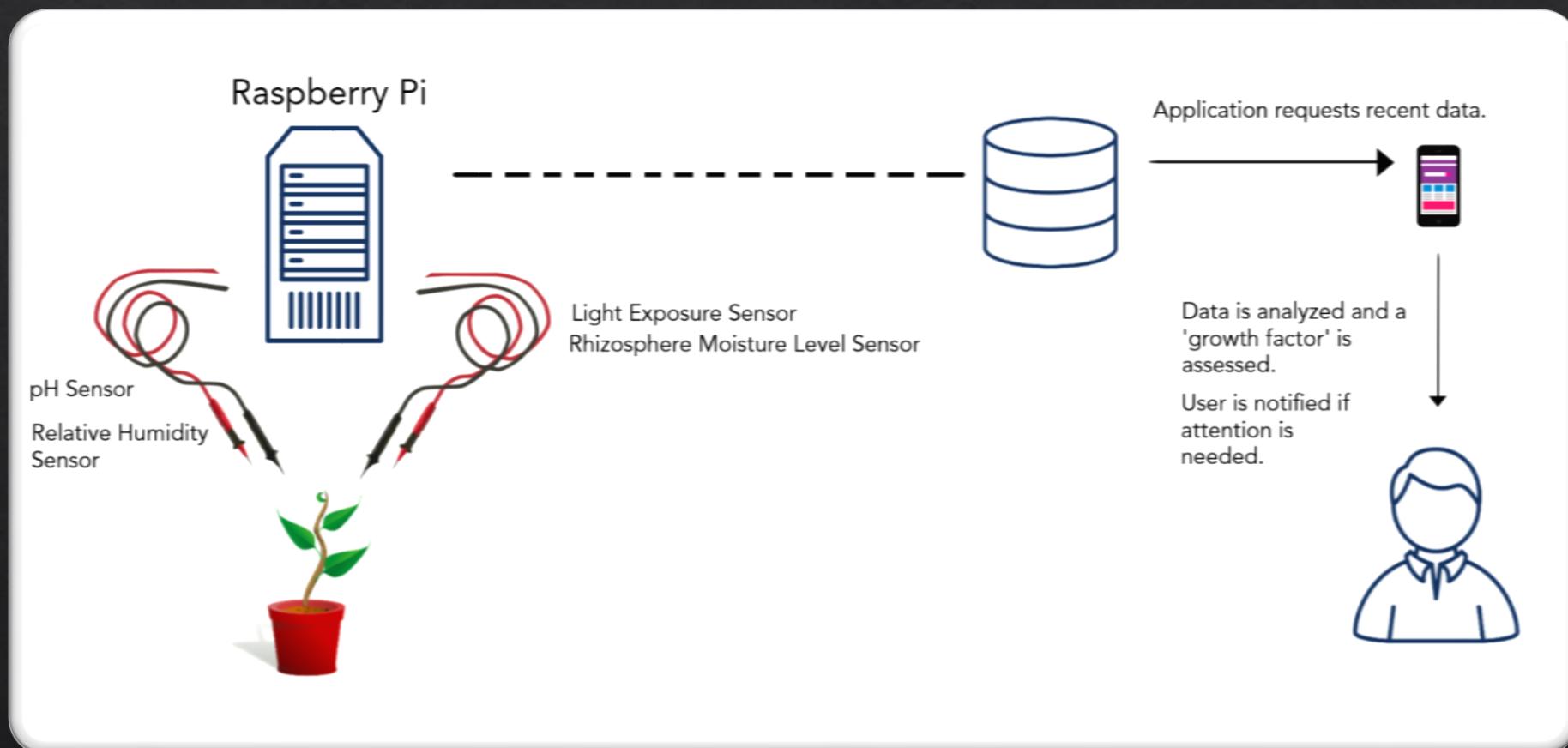
User Stories

- As someone new to plant-care, I want to receive in the moment notice of my plant's needs so that I can learn how to care for it better.
- As someone experienced with plant-care, I want to analyze in greater detail my plant's environment so that I can implement more effective care and foster better growth.
- As a botanist, I want to monitor the overall health of my greenhouse so that I can address issues with specific areas of my garden.

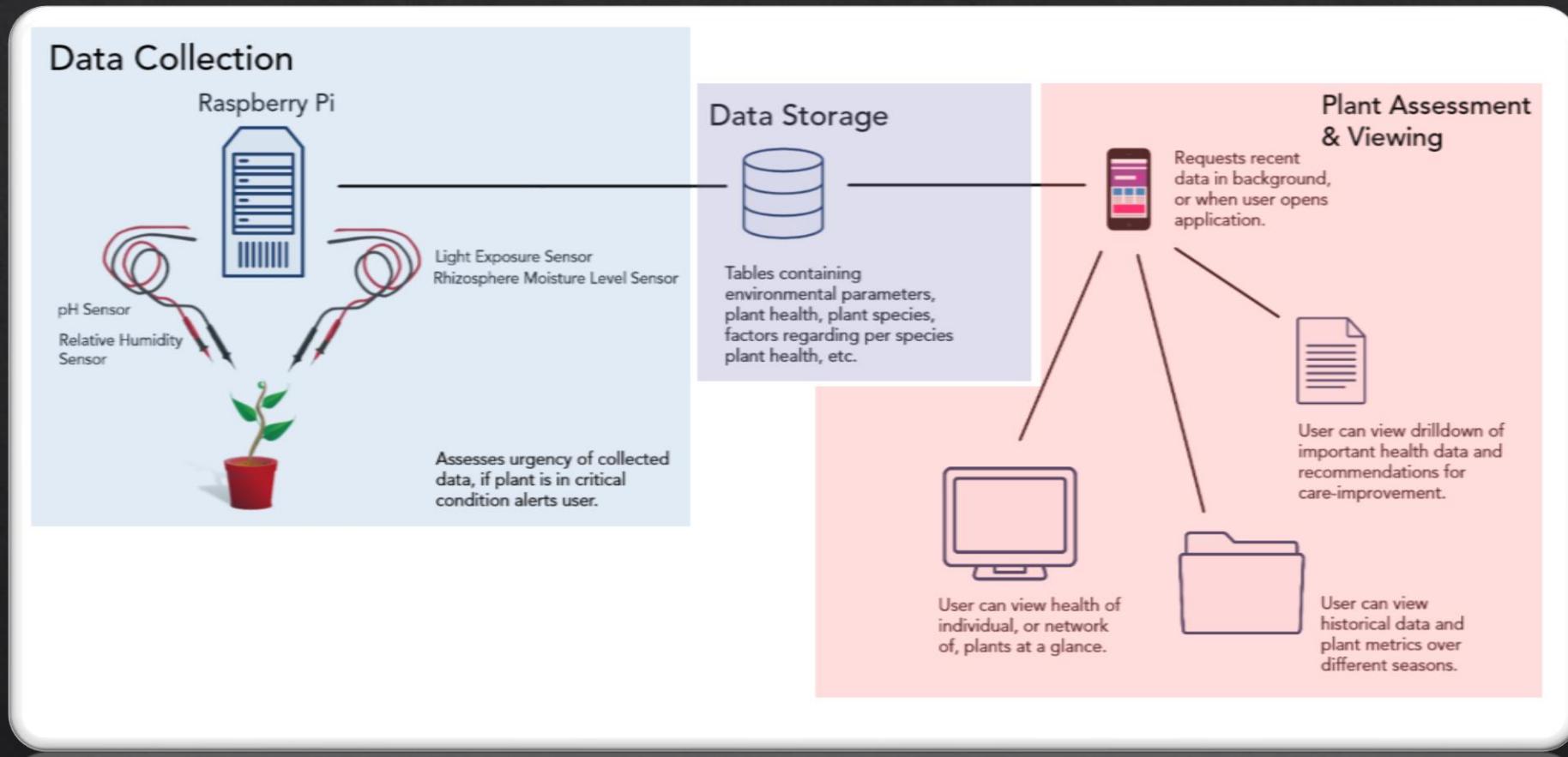
Design Diagram Level I



Design Diagram Level II



Design Diagram Level III



Project Constraints

Financial

- Hardware costs
 - Raspberry Pi - ~\$40
 - Soil moisture sensor - ~\$10 - \$15
 - Humidity sensor - ~\$10
 - Light intensity sensor - ~\$9
 - Soil pH detector: ~\$10
- Using free software
- Testing supplies
 - Pots, plants, soil, etc.
 - ~\$40

Professional

- We are well equipped to handle the programming
- We know little about plant life and care
- We have decided to work with a professor in the horticulture department to supplement our plant knowledge

Total Estimated Cost: \$125

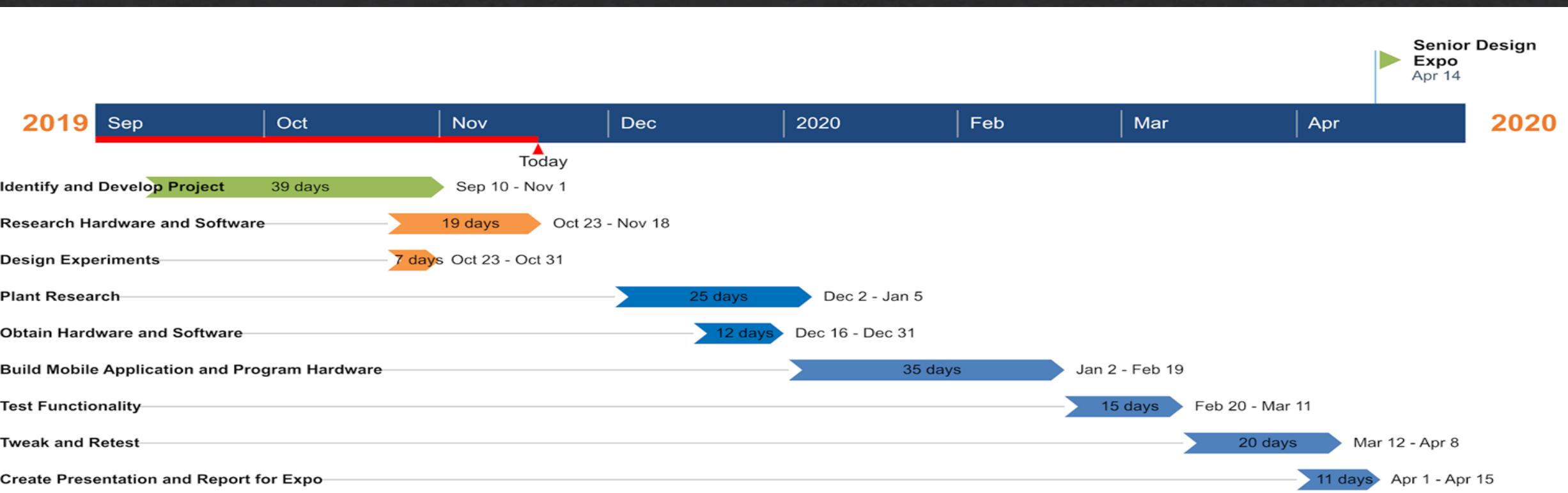
Current State of Project

- Research Hardware and Software
 - Raspberry Pi v. Arduino
 - Sensors available for monitoring desired trains
 - Research mobile application details
 - Language
 - Platform
 - Interface with hardware
- Design experiments for proof of function when project is complete
 - Plants in different types of pots
 - Using different soils
 - Experiment with plants that thrive under different conditions

Expected Accomplishments

- By Start of Spring Semester
 - Make decisions about hardware, software, and platforms
 - Obtain necessary hardware and software
 - Begin creating a plant database
 - Categorize plants based on their needs
 - Develop ranges of health for each of our monitored attributes
- Next Term
 - Code application
 - Set up hardware, get hardware and software working together
 - Test project
 - Write up report and display

Project Timeline & Milestones



Who is Doing What

Max

- ❖ Obtain necessary Software & Hardware
- ❖ Implement Preliminary Designs
- ❖ Mobile App Development
- ❖ Testing

Rachael

- ❖ Plant Research
- ❖ Task Management
- ❖ Sensor Experiments
- ❖ Testing

Expected Demo

- Display Board
 - Explanation of Project
 - Development process
 - Results from experiments/evaluation of the project
- Prototype including soil and plant
- Demonstration of product
 - Add water until a warning is sent
 - Have a plant light to trigger light sensor

Any Questions?