Instructor Review Meeting 3

Team sddec24-16
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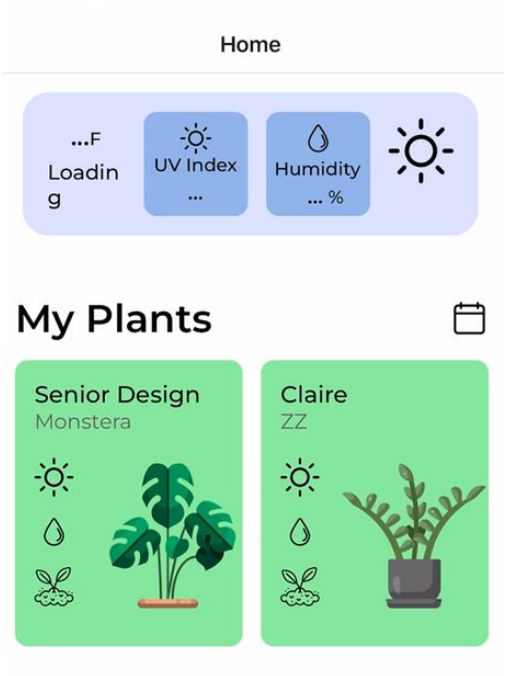
Introduction

- Create a device that allows for users to monitor plant conditions on a mobile app
- Made for hobbyist gardeners
- Alleviates need for accumulated knowledge
- Automates and simplifies timely soil tests
- Allows amateurs to have a scientific understanding they normally wouldn't have



Requirements

Physical Requirements

- Reasonably sit next to pot sizes of 3+ inch diameter
- Electronics enclosure on top of liquid reservoirs

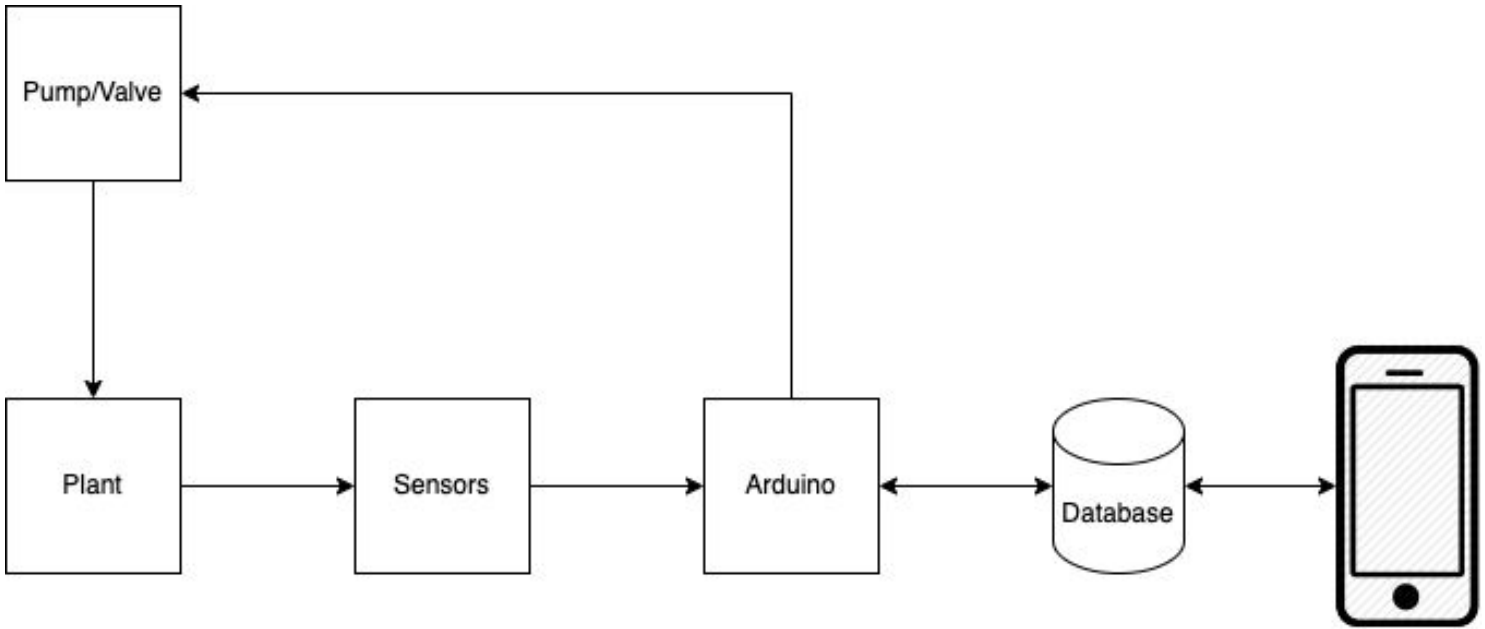
UI Requirements

- App displays sensor readings in various different ways (numerically, graphically)
- User accounts with persistent data
- Emergency notifications based on plant health

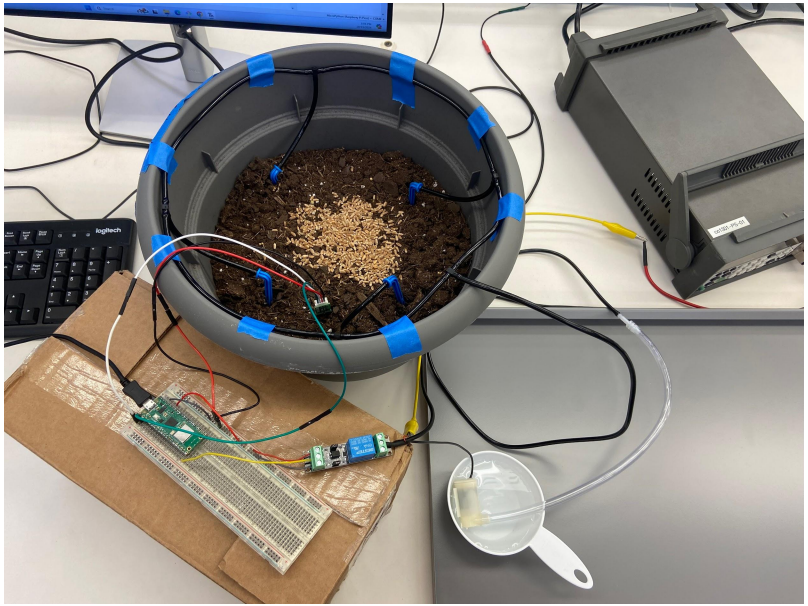
UX Requirements

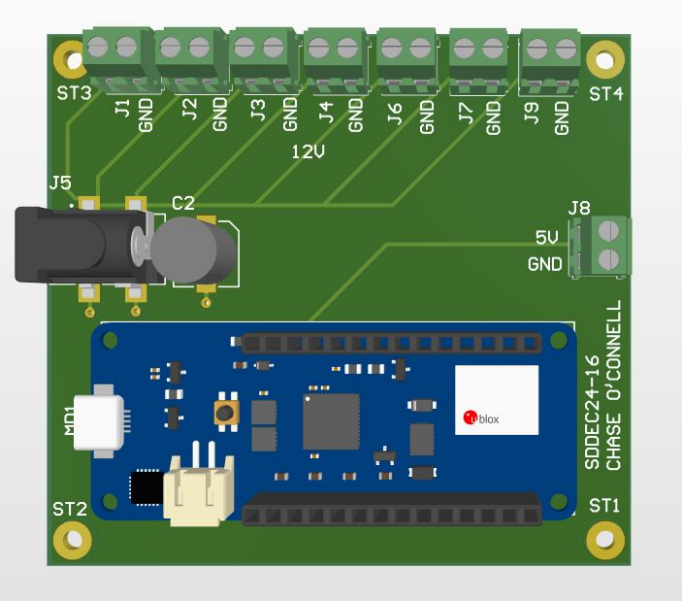
- The plant system should be low maintenance
- The water reservoir should be large enough to hold multiple days worth of water
- The mobile app should function reliably and predictably

Design Overview



Progress/Outcomes





Progress/Outcomes

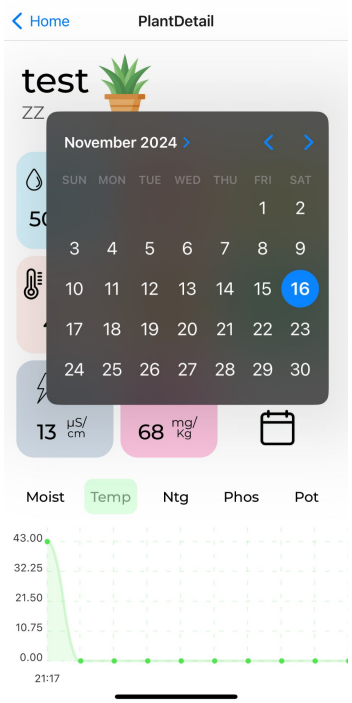
Data Transmission to Server: All 3 Sensors

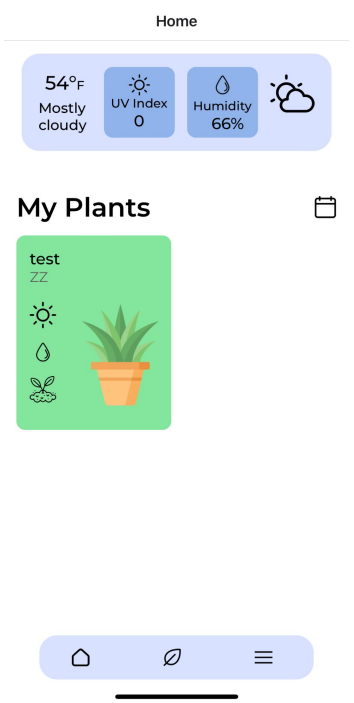
```
{"nitrogen": 0,"phosphorus": 0,"potassium": 0,"moisture": 0,"temperature": 257,"ph": 30,"salt": 0,"par": 0,"ec": 0}
115

HTTP/1.1 201 Created
Date: Sat, 16 Nov 2024 22:07:55 GMT
Content-Type: application/json; charset=utf-8
Content-Length: 1012
Connection: close
x-powered-by: Express
etag: W/"3f4-5+H+8KvZxgkajN7Sj+LzD3U2N+M"
```

PAR Sensor Output:

Progress/Outcomes





Pending Issues/Concerns

- Device may be unable to detect erroneous states and react properly
  - Implement something to discard bad data
  - Alert user to error state and prompt them to correct
- Explore additional firmware features
  - Low power modes
  - Real time capabilities
  - Investigate effective update rate to minimize power consumption with sufficient data
- Physical protection
  - Maintain water resistance + minimize enclosure openings
  - Securely mount external components and the enclosure itself
- Need to determine data viability, variability, and sensor calibration

Questions?