

# Plant Power

Dylan, Jorge, & Dominick



# **Plant Power: A user friendly solution for efficiently growing plants with technology**





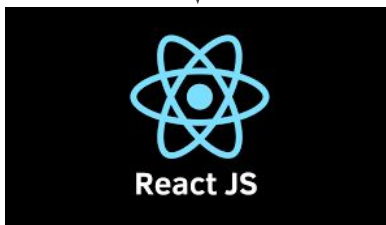
Source: willowoakherbs.com



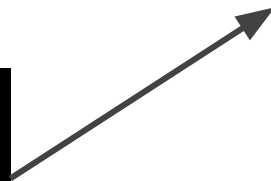
Source: store.arduino.cc



Source: 123rf.com



Source: reactjs.com



Source: hospitalityindustry.club



# Functional Requirements

# Track and Log Data

Priority: 0

System tracks plant's conditions and logs them.

Conditions to be measured:

- light intensity
- temperature
- humidity
- pH
- electrical conductivity



Source: store.arduino.cc



Source: ebay.com.au

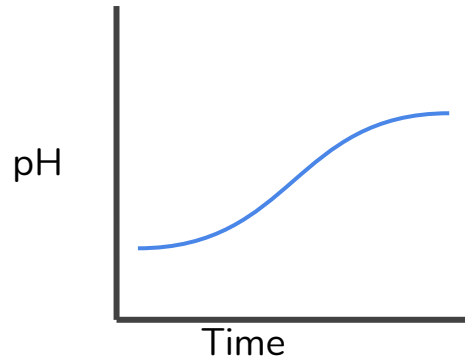


# Display Conditions

Priority: 0

Display analyzed data on webpage.

Displayed through graphs for ease of use



Source: pinterest.com



# Analyze Data

Priority: 1

Apply ML algorithms to calculate optimal conditions



Source: expert.ai



# Plant Profiles

Priority: 2

Page will host displayed data in organized fashion

Allow the user to cycle through plants to see specific data and analyzations







## Add and Edit Plant Profiles

Priority: 2

Allow the user to add a new plant

Allow user to edit a pre-existing entry by deleting or renaming





# Log In

Priority: 3

Allow user to login to webpage

Have account specific plants and data stored





# **Non-Functional Requirements**





# Data Transfer

Priority: 1

Applicable FR: Track / Log Data

specifies that the data is transferred from the back end to the front end efficiently.



Source: datanami.com



# Automatic Adjustment

Priority: 2

Applicable FR: Analyze Data

Automatically adjust conditions



Source: hgtv.com



# Seamless View

Priority: 2

Applicable FR: Plant Profiles

Seamless web page view to scroll through users plants



Source: housebeautiful.com

Source: iconexperience.com



# Connection of Profiles to Data

Priority: 2

Applicable FR: Add and Edit Plant Profiles

Profiles will be connected to data when a user creates a new plant profile





# System Constraints







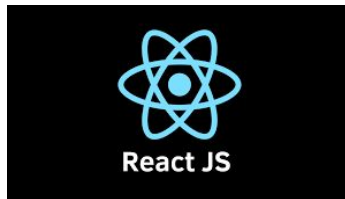
# Language Constraints

JavaScript

SQL

Python

Arduino C++





# Platform Constraints

React for Website

Arduino Create Environment



Source: [valuecoders.com](https://valuecoders.com)

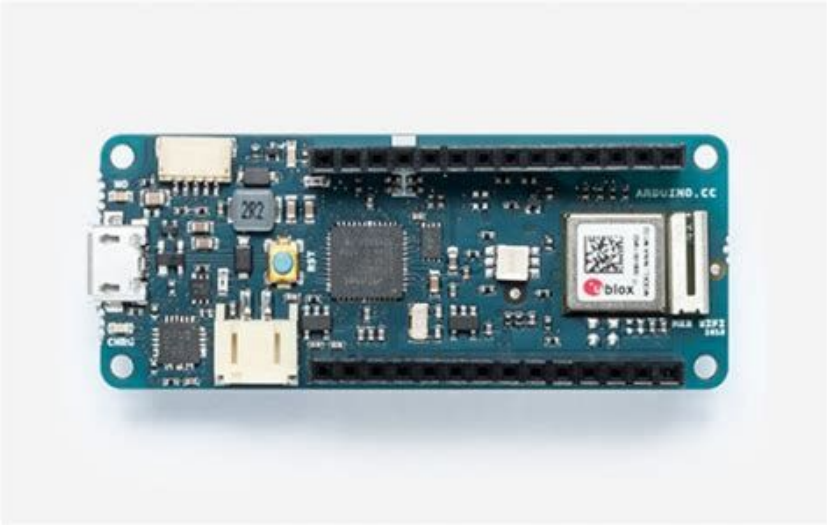


Source: [blog.arduino.cc](https://blog.arduino.cc)



# Hardware Constraints





Source: [store.arduino.cc](http://store.arduino.cc)



Source: [store.arduino.cc](http://store.arduino.cc)



# Network Constraints





## FireBase Web Service

To allow for the website to be publicly shared, we will host the website through firebase.



# firebase

Source: <https://venturebeat.com/>

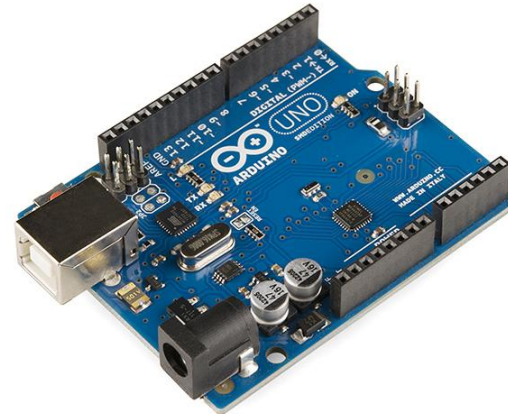


# **Budget and Schedule Constraints**



# Purchase of Arduino

Arduino and sensor kit used for collecting data.



Source: Wikipedia.com





# Web Hosting

The website could be hosted with an official domain name to release publicly.



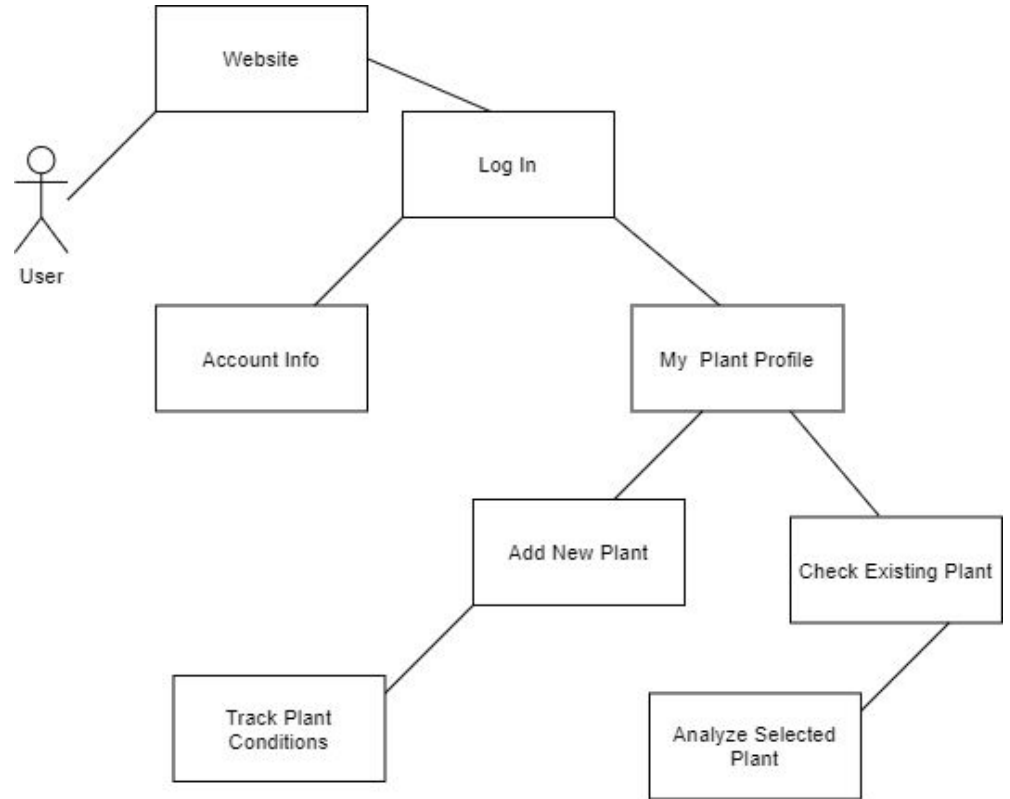
Source: <https://www.thebluediamondgallery.com/>



# Requirements Modeling



# Use Case Diagram





# **Evolutionary Requirements**





# Global Database

Allow for a global database that can be edited by any user.



Source: <https://iqbc.in/>



# Scalability

- Easily scaled up & down
- Preliminary design: at home grower
- Options for additional sensors

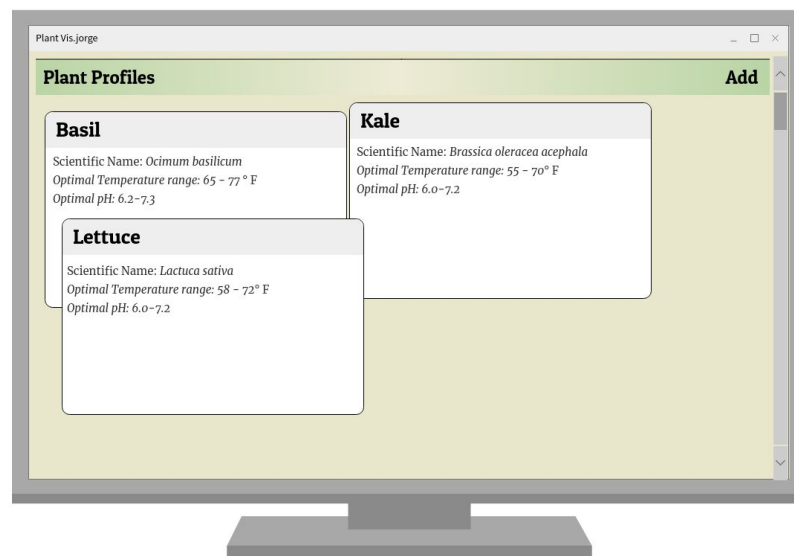
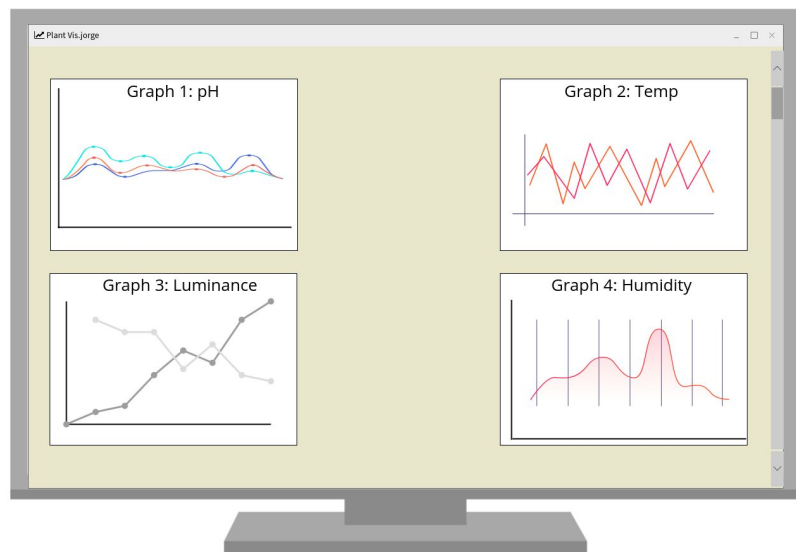


Source: <https://foodtank.com/>



Source: [powerhousehydroponics.com](http://powerhousehydroponics.com)

# Mockups:





**Questions?**