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Midterm 2

Smart House Watering System

midterm\_2

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## Contents

- I. [What is the watering system?](#)
- II. [Goals: Minimum features, desired features, and stretch goal features](#)
- III. [Diagrams](#)

### I. What is the watering system?

- A single small indoor plant is connected to a automatic watering system: a water pump, a water reservoir, a system controller (Particle Photon 2), and a sensor for soil moisture and another for air quality.

### II. Goals: Minimum features, desired features, and stretch goal features

#### Minimum

- Emitter follower + relay, sensors: BME + soil moisture + air quality + dust, SSD13006 OLED display, water pump and tubing. Everything connected to the Photon 2.
- Adafruit.io: periodically publish the sensor readings to a dashboard.
- Adafruit.io: a button in a dashboard that allows me to manually turn on the water pump.
- The water pump turns on for half a second at a time, based on things like sensor readings.
- Sensor readings are shown on the OLED display.

#### Desired

- IFTTT / Zapier: I get a text or email notification if any of my sensors go out of a designate range.
- There are 3 LEDS in a traffic light arrangement to show the soil moisture.
- The water reservoir is a container that the flower pot sites in and just looks like a decoration. The water is discreetly hidden.
- Accessibility features:
  - 3D-printed braille labels.
  - Layout is non-cluttered. The audience can easily reach the plant and see the components and how everything connects.
  - Large, clear font labels and pictograms.

### Stretch

- A 3-button survey panel, either in traffic light colors or smiley faces. It asks the audience about the plant health. The results are published to the Adafruit dashboard.
- I want to demonstrate effective use of code tools like libraries, because I want to work smarter.

### III. Diagrams

