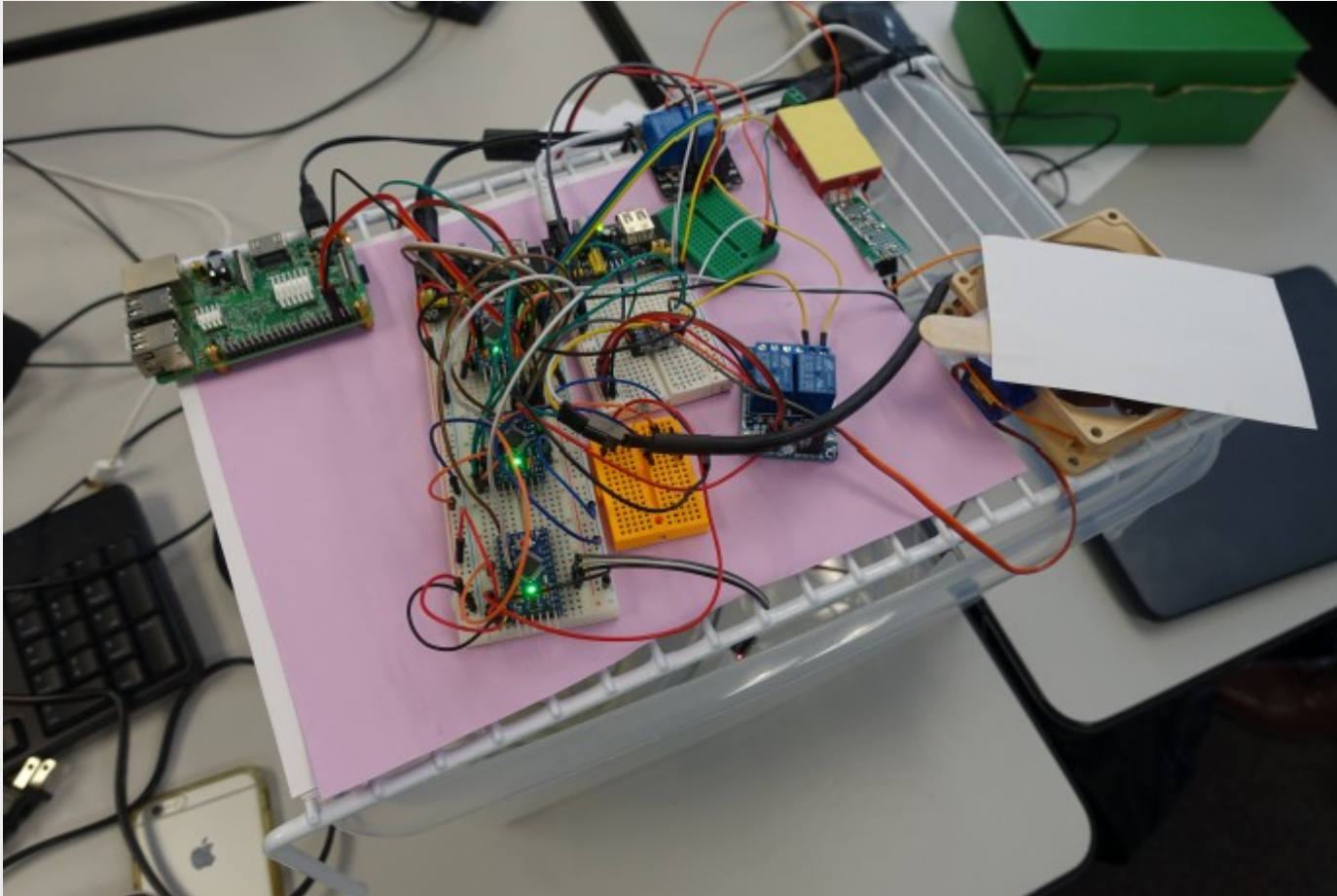


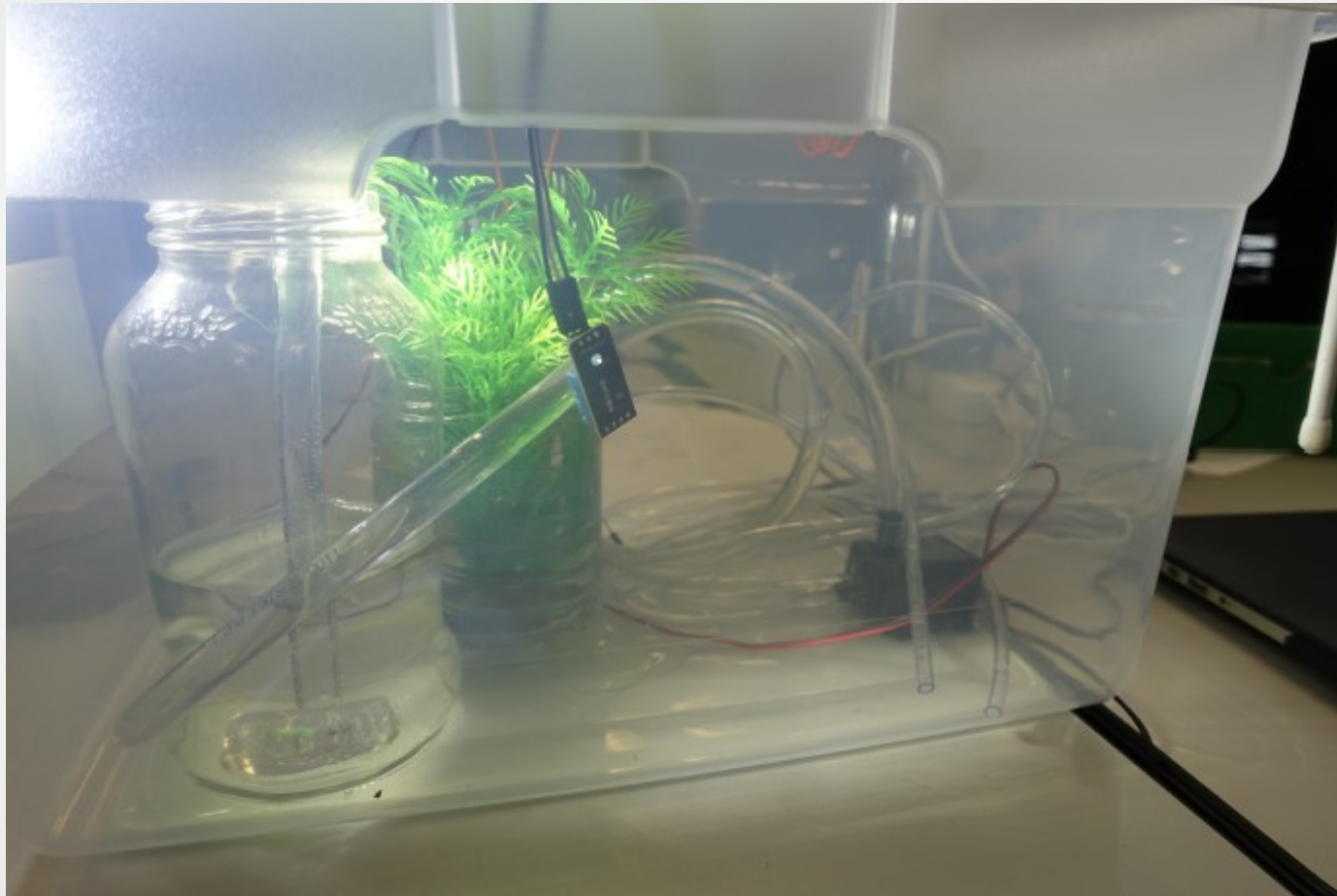
Micro Greenhouse

Vadim Babiy
Daniel Bracamontes
Wesley Nguyen
Jeremy Shaw

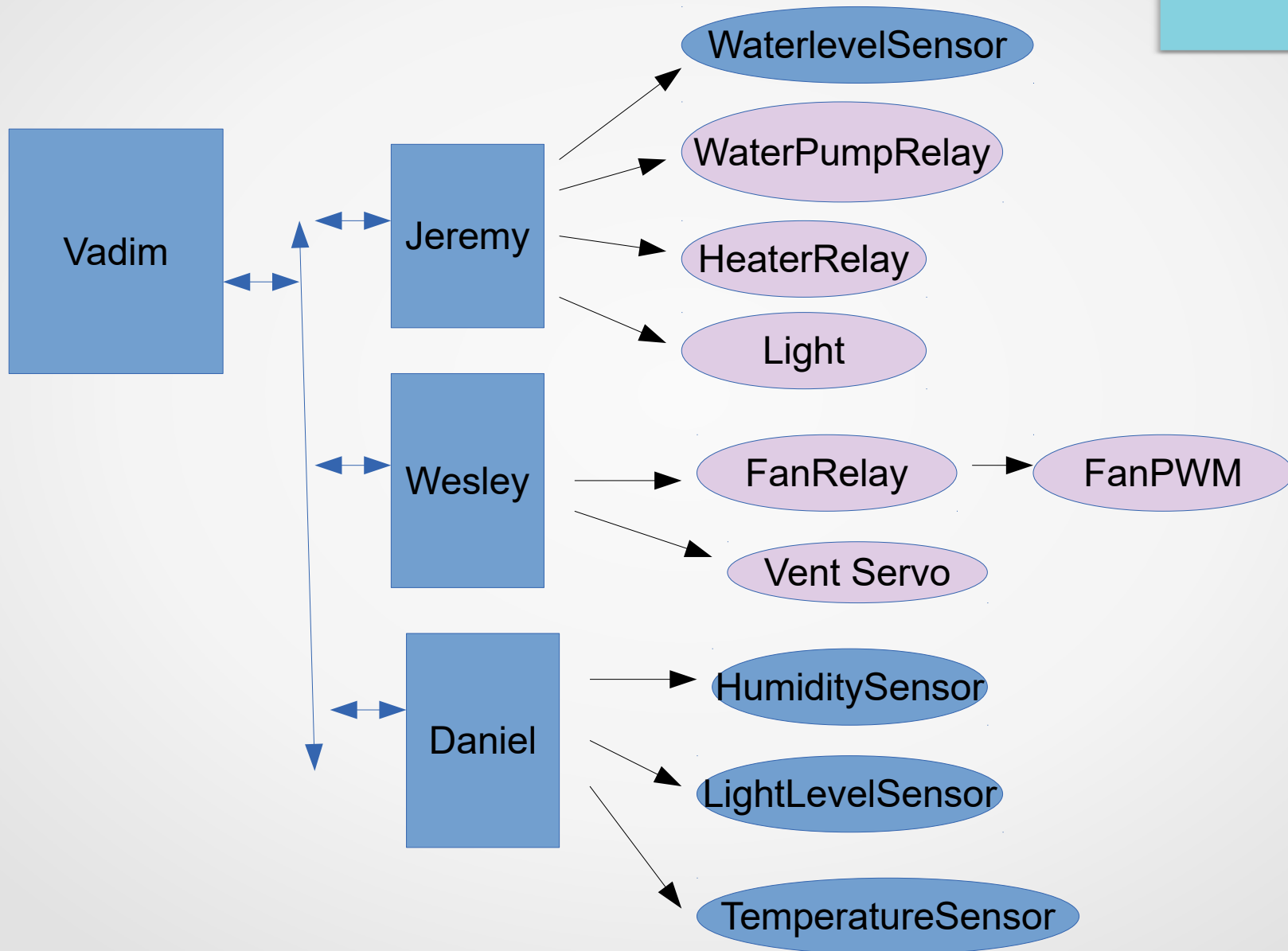
Upper Level Deck



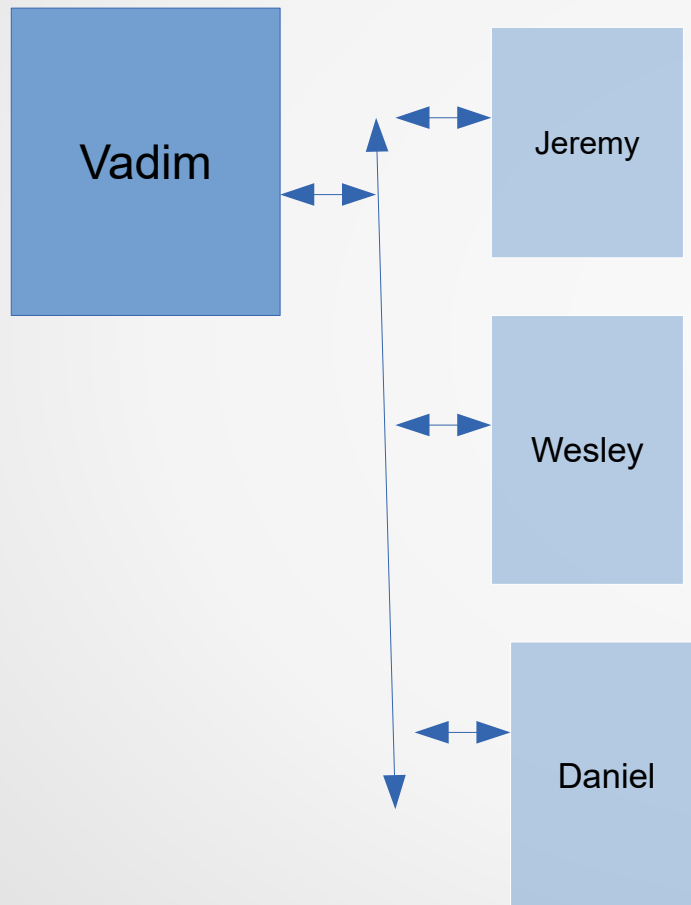
Lower Level Bin



Overview



Vadim



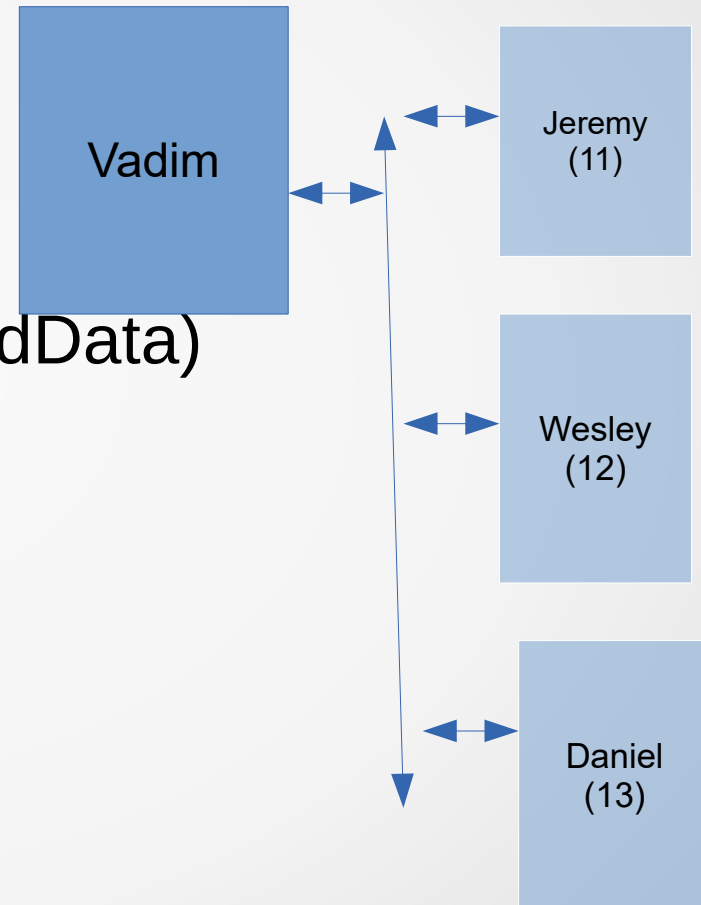
- CLI to directly poll sensors and control peripheral devices

- Web server to give current sensor readouts

- acts as I2C master to drive the I2C bus

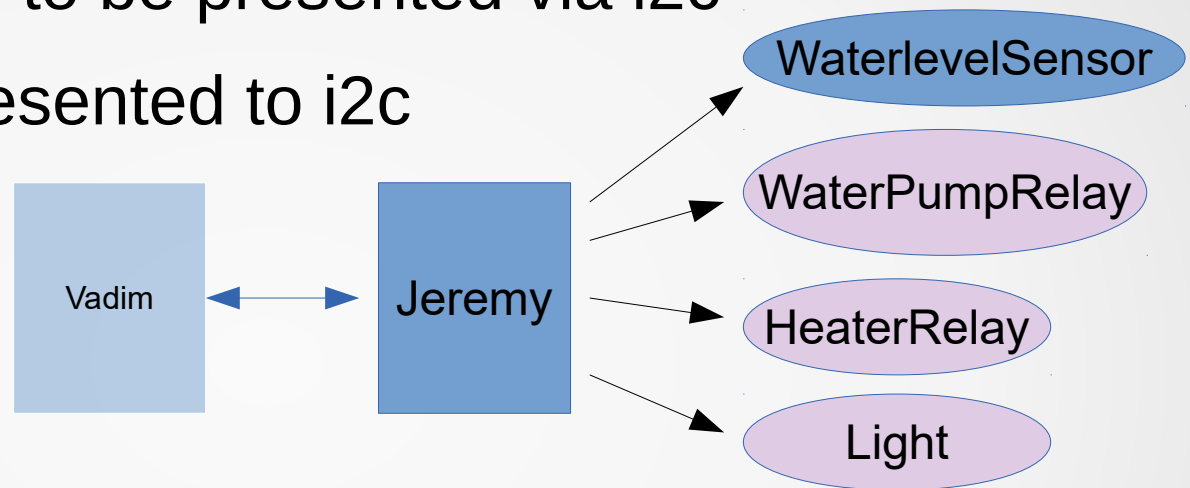
Aside: I2C

- Setup in a poll – respond format
- Example:
 - V: `bus_write(address, request)`
 - J/W/D: `onRequest(V, requestedData)`
 - V: `int x = readNumber()`



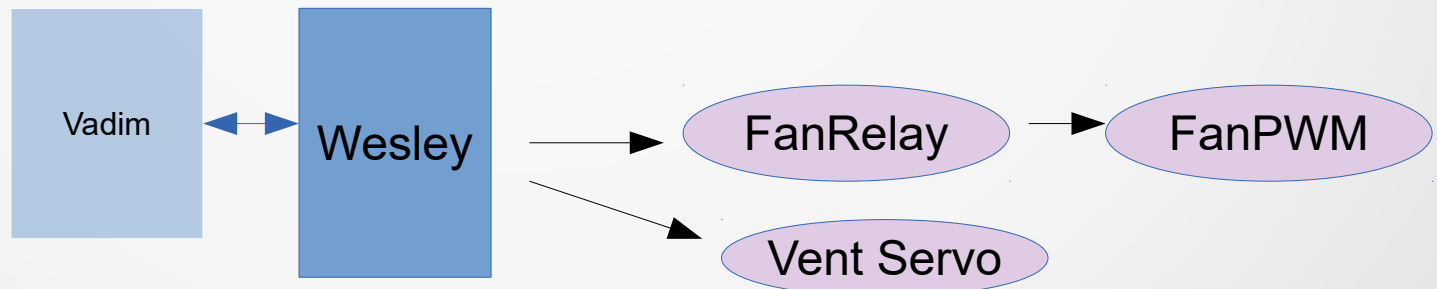
Jeremy (I2C address 11)

- Sensors abstracted to be presented via i2c
- Relays and light presented to i2c



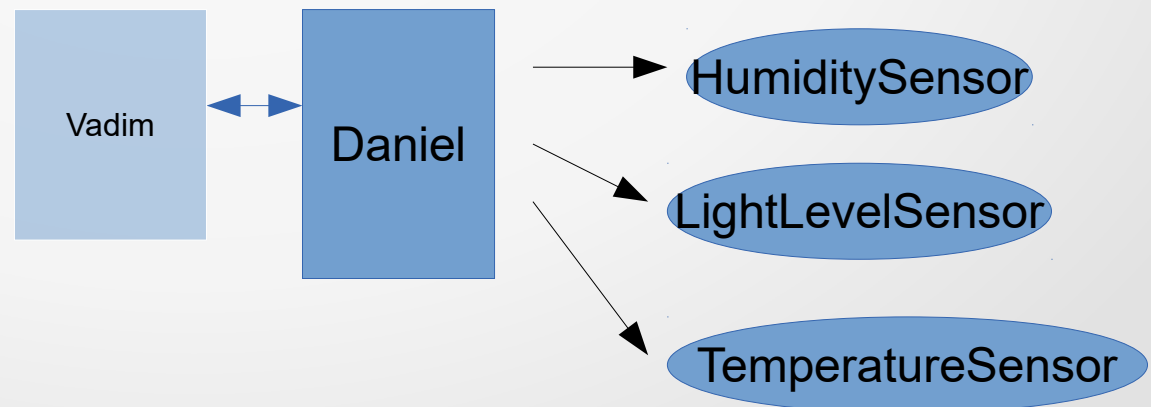
Wesley (I2C address 12)

- Presents Fan control (relay and PWM) to I2C



Daniel (I2C address 13)

- Presents Light level reading from ADC to I2C
- Presents Humidity/Temp from DHT11 to I2C
 - DHT11 has a maximum 1Hz refresh cycle, so the interstitial arduino automatically polls the DHT11 and stores the values locally to present to I2C master



Simplification

- Only need one microcontroller with network interface
- Reduce down to two relays:
 - Heater
 - Pump

Thanks!