1. Raspberry pi 4
   1. Requires 3A, 5V
2. Figure out how solar panels work
   1. Was looking at [these](https://www.amazon.com/Sunnytech-330ma-Module-Polysilicon-Charger/dp/B00HQXQOIQ/ref=pd_vtp_7?pd_rd_w=vNdwd&pf_rd_p=8a0cdbd6-15c9-4c22-ac9c-2db25e85487f&pf_rd_r=8B6238GT0R9QVQE6M0JA&pd_rd_r=e5d5a325-4092-4863-ae55-367f0a037f90&pd_rd_wg=Hp4NP&pd_rd_i=B00HQXQOIQ&psc=1)
      1. Solar panel specs: 6V 330mA
   2. design a voltage and current regulator
   3. And these [batteries](https://batterybro.com/products/lg-he4-icr18650he4-2500mah-20a)
3. Need [a mosfet](https://www.digikey.com/en/products/detail/diodes-incorporated/DMG3406L-13/5223305) to charge/not charge the batteries
4. (3) moisture sensor (analog output)
5. (2) phototransistor (analog output) (light sensor)
6. (1) valve for water (solenoid)
   1. 6v, 160mA
   2. Find an n-channel mosfet
7. (1) temp sensor (analog output)
8. Power (voltage divider for raspberry pi)
9. Make a custom printed circuit board

What do I want to get out of this

1. Use a solar panel to charge the batteries
2. Use the batteries to power the pi + the solenoid (valve)
3. Use sensors to determine the health of the plants as well as when to water them
4. Only open the mosfet to charge the batteries when they are below a certain voltage, and make sure there is sun out.
5. Use a touchscreen and make a Graphic user interface for users to use when at the pot.
6. Send data to app on phone, be able to control from phone.
7. Make a waterproof housing for electronics
8. 3d print case for the pi and electronics.