Diagram Information

* Created with Fritzing
  + Version 0.9.3b
  + Open source software that supports creation of electronics projects
  + Allows you to plan, document, and prepare project for production
  + Components for project are wired on a virtual breadboard
* Bread Board configuration
  + Centered around Arduino uno
  + The display(TFT Capacitive) and the lux sensor(TSL2561) both share serial clock(SCL) and serial data pins (SDA)
    - These two modules are communicated using the I2C (IIC) protocol
    - Multiple devices can be communicated to using only 2 pins
      * Varies based on micro controller
      * Analog pins 4 and 5 for Arduino uno
      * Each device has unique address to identify it in the line
    - I2C using series of rising and falling edges to signal
      * Start communication
      * End communication
      * Sending data to device
      * Read data from device
  + All modules share a common ground
  + The screen and lux sensor both use 3.3 volts
  + The remaining modules use 5v
  + There are 3 digital pins and 4 analog pins not being used
    - Possible future expansion
  + pH module (pH circuit) uses 2 pins
    - digital pins 3 and 4
    - can operate in I2C mode to allow for future expansion
    - isolation board not shown in this model (doesn’t affect wiring)
  + Air temperature and humidity (DHT11)
    - Uses 1 pin to transmit data for both readings
    - Digital pin 5
  + Display (TFT capactive)
    - Digital pins 9-13 for display control
    - Digital pin 4 to control the sdcard
    - Analog pins 4 and 5 used to read touch screen
      * SDA and SCL
  + Lux sensor (TSL2561)
    - Analog pins 4 and 5
      * SDA and SCL
  + Soil moisture and temperature (SHT10)
    - Digital pin 6 for data
    - Digital pin 7 for clock (bit that powers the logic)
  + Wiring has to be done manually at this stage
* Schematic
  + Simplifies the connection by merging
    - Common grounds
    - Common power lines
    - Removing the breadboard for direct connections
  + Same info as above (breadboard layout)
  + Modules represented by bloacks
  + Connections represented by a solid black line or a colored dashed line
  + Wiring automated by fritzing
* PCB (optional)
  + Fritzing can generate a PCB design based on your wiring
  + Design can be sent to fabricator for manufacturing
  + Wiring is automated by fritzing