Humidity Subsystem

* humidity sensor (SHT35-DIS-F) which will constantly monitor the humidity
* vent @ top of enclosure controlled via servo motor (lower humidity)
* humidifier/mister (raise humidity)

Water/Nutrient Subsystem

2 12 volt solenoid valves
PLS-041A-3PAI float switch for water level
2 DFR0198 temp sensor for water temp and res temp

Oxygen Subsystem

- An air stone attached to a pump will be placed in the Smart Pot (agitate the water).
- A small fan will be integrated into the side of the Smart Pot lid (push old air out).
- An air vent at the top of the Smart Pot enclosure will always be slightly open to allow fresh air into the enclosure. Servo motor is connected to vent (allow new air in).

Grow Lights Subsystem

* light sensor to keep track of total amount of light plant recieves (in 24hrs).
* LED grow light (pre-made, plant recieved too little light).
*shades with stepper motor (plant recieved too much light).

User Interface Subsystem

- Plant types will be displayed on TFT LCD (DFR0664)
- Type will be selected using rotary encoder (PEC11R-4115F-S0018)
- Displays plant types, real-time data from sensors, maintenance alerts

Power Subsystem

12v wall power adapter
Route 12V to the solenoid valves
Stepdown circuit to 3.3v to route to MCU and sensors LP2980IM5-3.3/NOPB

Control Subsystem

* STM32 microcontroller which takes input from all sensors, sends signals to actuators
* STM32Cube or Arduino IDE used to program STM32
* USB adapter to download firmware into MCU

DO WE NEED A HUMIDIFIER?????
- Don't include one right now, but later on if we need it we can add it.