Sip n' Sprout Software Block Diagram

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Class: LEDstrips
Status: To be Written

Functions:

- lighthigh()
  - Function that will send higher current flow to LED lights based on feedback from light sensor
- lightmed()
  - Same as above but medium light
- lightlow()
  - Same as above but low light
- lightoff()
  - Function will turn off LED strip lights

Class: SoilSensor
Status: Done

Functions:

- moisturecheck()
  - Checks moisture levels in soil and determines if level is adequate or inadequate
    - Adapted from previous project "Plant Reminder Box

Class: PeristalticPump
Status: To be Written

Functions:

- pumpon()
    - Will turn on pump for the amount of time it takes to deliver 200 mL of water
    - Will record date/time when pump was last run and send data to LCD screen
- pumpoff()
    - Will turn off pump

Class: LightSensor
Status: To be Written

Functions:

- lightcheck()
  - Will get data from light sensor and determine whether the external light is high, medium or low
    - Adapted from previous project "Plant Reminder Box"

Class: LCD Display
Status: To be Written

Functions:

- display_watering_time()
    - Will display the timestamp of the last time the plant was watered based on when the pump was last turned on
- display_blank()
    - Will wipe text from LCD and display blank screen

Class: Main
Status: To be Written

Functions:

- LCDupdate()
  - Will control LCD and display timestamp
- SoilCheck()
  - Will check soil moisture level and determine whether to turn pump on
- LEDlevel()
  - Will control LED brightness level based on light sensor readings of external brightness

User Inputs/Output

Input: potted plant

Output: Well treated plant and indication of when the plant was last watered so that if the water reservoir goes dry they will be aware of how long it has been since the last watering

Flow Diagram - Sip N' Sprout

User input: Potted plant

Soil Sensor
- moisture check ()

Peristaltic Pump
- pump on ()
- pump off ()

Light Sensor
- light check ()

Main
- Soil Check ()
- LCD Update ()
- LED Level ()

LED Strips
- light high ()
- light med ()
- light low ()
- light off ()

User Output: -Time since last Water
-healthy plant

LCD display
- display _ water _ time ()
- display _ blank ()