

Smart Plant - Keeping Your Plants Happy

Problem Statement

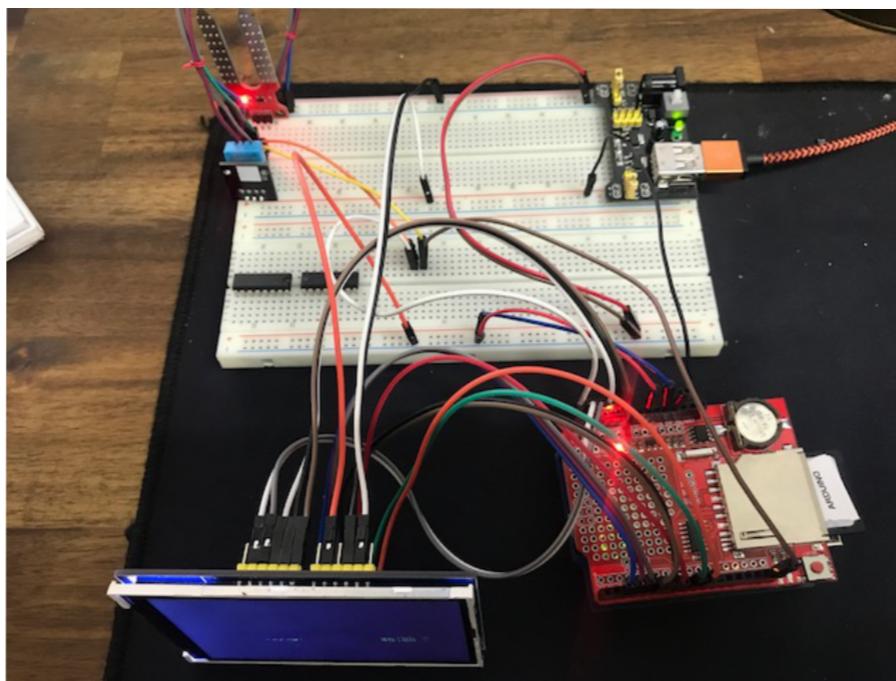
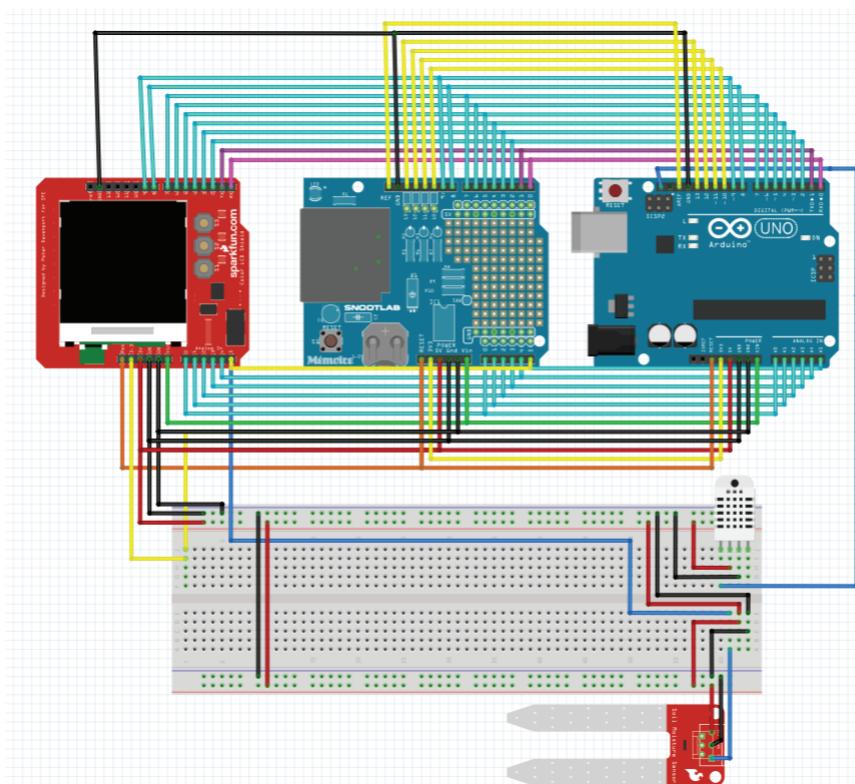
Stan has quite a large Rose Garden, with his work and family commitments, it is becoming harder for him to maintain his rose garden.

Stan's Roses need to be kept within specific Temperature, Humidity and Soil Moisture levels, Stan would like to be able to obtain this information at a glance instead of spending a couple of hours in his garden testing and recording results every day.

Images and Interconnects

Modules Used:

- Arduino Uno R3
- Data Logging Shield
- 3.5" TFT LCD Shield
- Soil Moisture Sensor
- Temperature and Humidity Sensor
- No Solder Breadboard
- Assorted Jumper Wires



Data Collection

Smart Plant reads Temperature, Humidity and Soil Moisture every second, and Displays the figures on the LCD Panel, these figures are recorded and stored in a .CSV file with a timestamp for later review.

	A	B	C	D	E
1	Date	Time	Soil Moisutre	Temperature	Humidity
2					
3	23/09/2018	9:02:00 AM	8	25 °C	45%
4	23/09/2018	9:03:00 AM	8	25 °C	45%
5	23/09/2018	9:04:00 AM	8	25 °C	45%
6	23/09/2018	9:05:00 AM	8	25 °C	45%
7	23/09/2018	9:06:00 AM	9	25 °C	45%
8	23/09/2018	9:07:00 AM	9	25 °C	45%
9	23/09/2018	9:08:00 AM	9	25 °C	45%

Ethical Concerns

In the Current Configuration, the Smart Plant module does not store any user identifiable data or communicate with any other devices, therefore I do not foresee any ethical concerns at this time

Results and Conclusion

Initial results are very promising, and this solution could be very beneficial for Stan

however due to the complexity of my code it has been difficult to run the Smart Plant program on an Arduino Uno R3, I did purchase a Mega development kit but unfortunately it has not arrived yet, therefore i have built and tested each module separately where they work well.

additionally, with an Arduino Mega an Ambient Light Sensor could be added for more detailed analytics, a Wi-Fi module or Sim module could also be added for real time notification to Stan's Mobile Phone or Email, or even multiple sensor arrays (with the help of shift registers) for multiple reading across a plant bed