Going Beyond: Data Acquisition and Analysis

Introduction:

Sensors and data acquisition play a very important role in all areas of science, technology and engineering. Temperature sensors work to keep the homes we live in the temperature that we like, light sensors are used to determine a satellite's position in regards to the sun, and all of this data has to be saved, manipulated or processed, and then analyzed to make well informed decisions.

Problem:

You are to use what you have learned about Arduinos, inputs, and outputs, to design a system to log data and save it on a storage device. Once the data is saved you are to process the data with a spreadsheet, make a graph of the data, and provide a written analysis of what you have found.
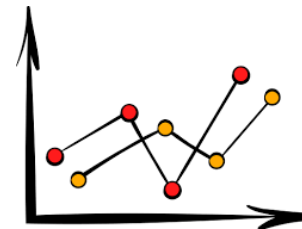
Rules & Limitations

- You must use a control system approved by your instructor
- You may only use sensors and outputs as approved by your instructor
- Must be wired and built as neatly as possible.
- Program must utilize what you have learned in previous experiments and should contain loops, variables, and counters.
- Use excel or google sheets to process the raw data and make a graph

Deadlines

Task	Due Dates
1. Design an experiment and get it approved by your instructor.	
2. Design your hardware solution: Arduino/sensors/outputs.	
3. Write the program, test and implement it.	
4. Save the date to a spreadsheet, and graph it!	
5. Provide a written conclusion of the data analysis	

Notes: