Project Showcase FAQ

1. How would you continue project development if given time? If given time, the project would likely be approached in a different way. First, we would likely add the ability to use "Okay Google" to control certain features of the system (heat lamp/LEDs). Something else we would do is use an Arduino Nano to create an automated door kit. Another feature we would've done is make the data accessible wirelessly instead of going to an HTML page.

2. What lessons did you learn from the project? We learned how to adapt and adjust in the face of adversity. Having the ability to keep moving forward and making progress in the project is something that is very valuable in practice. Re-thinking aspects of the projects due to conflict is something that had to be done in order to complete this project and having the requirements be met accordingly.

3. What would you do differently if you could do it over? The main thing we would do if we could do it over is design the PCB differently. There was a lack of understanding of the overall design which lead to some serious conflicts when combining the hardware. We had to be creative in order to make the proper connections due to the errors in traces when designing the PCB. However, a newly designed PCB would make the wiring easier and would allow for the more components to be easily accessible and replaceable.

4. What was the biggest challenge, and how did you approach it? The biggest challenge was adjusting to the errors made when designing the PCB. There were a few places that the traces didn't lead to where they needed to be going to on the Arduino Mega, which caused many different errors when initially combining the hardware and testing the blocks. With some creativeness, the proper connections were made to the Arduino, but that limited the ability to change some components.

5. What is the most impressive thing about your project? The most impressive thing is that the Automatic Door that can open on daylight, user-defined light level, or the sunrise/sunset based on our timezone using an RTC. This feature was something that wasn't required, but is something that we chose to add for some more control of when the door opens/closes.

6. How frequent is data collected/recorded? The data is collected and recorded, then saved onto an SD card every ten minutes. The interval can be set by the user, however the decision was based on the fact that food and water levels won't significantly drop and the data collected will avoid any extraneous data that provides no benefit to what is being graphed.