Final Report - Team Gold Squadron

Project Conclusion:

At the conclusion of our first laboratory assignment, we believe that our overall project was a success in the goals that we set when we began planning for the project. Even though our project outcome was satisfactory, there were still some complications along the way leading up to the due date. From the planning phase we were reasonably organized in digesting the project requirements, and determining all the components of the project that we needed to build. We found our group's strengths and split up our work in order to maximize efficiency and come up with the best possible project outcome. During the construction phase of our design, we built and tested the hardware components with each step of the requirements and applied sound software design so that our code was able to withstand most complications that may arise. We applied most of our skills that we have acquired throughout our academic careers, which we found were surprisingly relevant to our design. In the final steps of our project, we were able to mesh our separate components with ease because we layed out our plans before we began implementing our design. Doing so, saved us a lot of time and frustrations. The issues we did run into were relatively small and easy to overcome. When we plan for our future laboratory assignments and senior design project, we will have great confidence in our communication skills and cooperation in order to achieve our goals to reach the required project specifications.

Group Participation:

Robert Hemmingsen is responsible for hardware, he set up a thermometer system of all components such as connect the Arduino with temperature sensor and LEDs, and program the controller. Aaron Ambrose take care the GUI, design all of program logics. He use javafx to create the animatic chart and fields that change and update the information from user. Reed Stock worked on the communication between the hardware and GUI. He used some extra libraries to read the data from Arduino, that then can be plotted on our chart on the GUI. He also figured out how to send the byte to Arduino to control the LEDs by the button on the GUI. Junhan Wang took care of sending the text message and 3D-printed our third box. He used the library of Twilio, which is a company API and used programmable communication to create a code function to send SMS. He also designed a 3D model of third box using Rhino. The Engineering technology center of University of Iowa helped to 3D-print our third box out.

Overall Success:

* Project specification understanding
* Thorough planning of the complete design
* Communication skills to divide work and connect separate components
* Prior knowledge that allowed us to find the best solution for the design
* Scheduling was proficient and time management was effective
* Problem resolution was quick and efficient

Overall Failures:

* Not utilizing the most effective software and collaboration suites (Next time we plan to use GitHub for our main source of sharing code and documentation)
* Our design was not perfect such that we were missing only a few small requirements in our evaluation