sdmay19-47: NSF Lab furnace control system

Week 1 Report
August 29 - September 5

Team Members

Jeremy Hartl — *Report Manager*
Adam Matthews — *Software/Hardware Engineer*
Nicholas Brylski — *System architect*
Christopher Pohlen — *Software Engineer/Gitlab Moderator*
Lingkai Lang — *Electrical engineer*

Summary of Progress this Report

We met with Dr. Tuttle to examine the current state of the furnace controls and learn what changes we are to make. We are to create a new user interface to control and display settings for two existing sets of components: mass flow controllers (MFCs) and Omega temperature controllers (TCs).

Secondly, we met as a group to discuss team expectations, which include: discussing conflicts openly, fair distribution of work, meeting individual and group deadlines, sufficient documentation of work, and being available for other members when they are in need of one's expertise or advice.

Finally, we found data sheets for both the MFCs and the TCs.

Pending Issues

Block diagram, Research on microcontrollers and RS232, find a way to communicate with the Omega controller. The arduino and rs232 shield use the same serial port, this is an issue because we cannot communicate with the computer and the temp controller at the same time.

Plans for Upcoming Reporting Period

Discuss block diagram and our research on RS232 and microcontrollers

- Create an initial block diagram of proposed system
- Examine MFC and TC data sheets
- Research RS232 interface
- Attempt Arduino interface with TC
- Research microcontrollers and consider what it would take to design a microcontroller

---

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Jeremy Hartl	Contributed in our brainstorming and research. Provided input in discussing how we will operate this semester. Edited the Status	5	5

	Report.		
Adam Matthews	Found datasheets for Omega Temperature Controller and Mass Flow Controller. Attended meeting with Tuttle and meeting with group.	5	5
Nick Brylski	I am brainstorming what the entire system looks like, what is powering it and what kinds of interfaces and sensors we will need to get the project done. I will also be reporting to Dr. Tuttle our accomplishments	5	5
Christopher Pohlen	I am the most familiar with systems like Gitlab on the team, so I have become the moderator for our Gitlab project. I also helped gather information on what our project goals are from Professor Tuttle.	5	5
Kevin Lang	brainstorm ideas for the project with group. Discussed hardware aspects with Nick	5	5

Gitlab Activity Summary

Nothing to report.