

**EE/CprE/SE 491 WEEKLY REPORT 8**

**3/28/2022 - 4/3/2022**

**Group number: SDDEC22-01**

**Project title: Plastic Machine Embedded IOT Controller**

**Client & Advisor: Mark Hansen & Dr. Jones**

**Team Members/Role:**

**Stone Widder - Technical Lead**

**Joshua Baringer - Software Lead**

**Rachel Teberg - Historian/Reporter**

**Evan Pasero - Project Manager**

**Charles Sang - Controls Lead**

○ **Weekly Summary**

This week Rachel made some new UI sketches since our screen that we chose to use is a touchscreen. Josh helped Rachel out with things that might be overly complicated to implement so that our UI is easier to develop and test. Stone worked with the PID library on the BBB and helped test the thermocouple circuit that Charles made. During the test we learned that the circuit currently cuts off at the wrong temperature and Charles should have it fixed and ready to go in the next few days. Evan continued work on the PCB and research on relays.

○ **Past week accomplishments**

- PCB schematic -
  - Researched gentle shutdown circuits -Rachel
  - Created relay controls - Evan
  - Began debugging the thermocouple circuit and checking temp limits on the breadboard - Charles
- UI screens - Rachel, Joshua
  - Sketched all UI Screens
  - Used figma to create an interactive demo of the screens
- Got PID control loop working -Stone
- Analog thermocouple was connected to beaglebone -Stone and Charles
  - The thermocouple was putting out too high of a voltage so the circuit needs to be redesigned a bit

○ **Pending issues** *(If applicable: Were there any unexpected complications? Please elaborate.)*

○ **Individual contributions**

<b><u>NAME</u></b>	<b><u>Individual Contributions</u></b> <i>(Quick list of contributions. This should be short.)</i>	<b><u>Hours this week</u></b>	<b><u>HOURS cumulative</u></b>
Stone Widder	Got pip installed the BBB, Helped josh test power down time, Helped with gentle shutdown circuit.	6	46
Rachel Teberg	Researched gentle shutdown circuit, created a couple UI screen sketches	7	44
Joshua Baringer	Helped with designing UI	3	41
Evan Pasero	Began work on circuit board schematic, parts research cont.	4	44
Charles Sang	Debugging Thermocouple Circuit and error calibrations	5	47

○ **Plans for the upcoming week**

**Joshua:** Finish command line changes, begin testing GUI implantation software.

**Stone:** Get PID demo up and running for client

**Rachel:** Assisting with GUI Implementation.

**Charles:** Finish working on thermocouple circuit error calibration.

**Evan:** Choose a relay and order it for stress testing, finish pcb.

○ **Summary of weekly advisor meeting**

Our meeting was cut a little short because our advisor was stuck in a departmental meeting that ran too long. In our weekly advisor meeting we asked about what it takes to design a gentle shutdown circuit. He gave us some feedback about what we need to look for while designing the circuit. In the meeting we also discussed our NDA that still needs to be signed by him so we can sign it ourselves. We asked about his thoughts about our progress and if there was anything we needed to do to be better in his eyes.

