

sdmay19-12: Automatic Solder Dispenser

Week 1 Report

August 20 - September 10

Team Members

Jason Austin – Software Lead

Justin Wheeler – Mechanical Lead

Zachary Bumstead – Electrical Lead

Kevin Carlson – Mechanical/Electrical Integrator

Trenton Allison – Software/Electrical Integrator

Samuel Willford – Report Manager and Meeting Facilitator

Summary of Progress this Report

- Initial Client Meeting - Everyone
 - Met with Lee Harker and discussed expectations
 - Project should be 100% completed
 - Dispenser should not be easily hackable or have loopholes
 - Should look very nice inside and box should have clear lid for viewing
 - Touch screen should have administrator functions
 - Password protected
 - Changing solder
 - Viewing usage data
- Lightning Talk Slide Preparation - Zach, Kevin, Sam, Justin, Jason
 - Kevin and Zach made preliminary slides
 - Jason worked on 3-minute slide set
 - Sam worked on 1-minute slide set
 - Justin worked on 30-second slide
- Finding and Ordering Stepper Motor Driver - Sam, Trent, Jason
 - Researched and ordered a temporary driver
 - Will be replaced with a board containing 4, one for each stepper motor
 - Part Number: TB6612
- Testing Stepper Motor Driver - Jason, Trent
 - Stepper motor driver worked when tested with stepper motor and applying voltage signals.
 - Drew 0.30A current
- Initial Raspberry Pi programming - Jason
 - Picked up Pi and display from ETG
 - Tested guizero library for python GUI

- Mechanical Learning - Justin
 - Started disassembling the Inventor drawings previously given to us
 - Learning how the parts work together
 - Discussed possible ways to create extruder piece
 - Modeled Accumulator
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Pending Issues

- Solder tube/collector piece design
 - Needs to keep people from grabbing the solder and pulling more out
 - Needs to look nice (No elephant trunk/tail hanging from box)
 - Can't be risky in terms of a clog or jam
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Plans for Upcoming Reporting Period

- Programming - Jason
 - interface Pi with stepper board
 - Create initial control library
 - Driver Board Layout - Zach, Kevin, Trent
 - Put parts needed in parts list, even if ETG has them already.
 - Design board (this week and next week)
 - Figure out how to get board ordered
 - Mechanical - Justin, Kevin
 - Figure out "tail" piece problem
 - Ask client for input
 - Look at shafts for spools
 - Figure out how to get more extruders made
 - Find a potential box for enclosure
 - Needs appropriate dimensions
 - Should be clear on top
 - Lightning Talks - Jason, Sam, Justin
 - Deliver Lightning Talks in class
 - Jason - 3 minute
 - Sam - 1 minute
 - Justin - 30 second
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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Sam Willford	Presentations, managing, reports, finding and ordering driver	8	8
Jason Austin	Collect Pi and Screen, tested guizero library for GUI	5	5
Trent Allison	Finding driver, testing driver and motor together	4	4
Justin Wheeler	Took measurements off CAD file, modeled accumulator	7	7
Kevin Carlson	Lightning Talk Presentation Prep	7	7
Zach Bumstead	Lightning Talk Presentation Prep	5	5

Gitlab Activity Summary

 Action: pushed to, Sat Sep 08 2018

Author: willford

Title: Added Parts List

Action: joined, Sat Sep 08 2018

Author: wheeler1

Action: pushed to, Sat Sep 08 2018

Author: jsaustin

Title: Added stepper pinout file

Action: pushed to, Tue Sep 04 2018

Author: jsaustin

Title: updates

Action: pushed to, Tue Sep 04 2018

Author: jsaustin

Title: Upload of test app and env set

Action: pushed new, Thu Aug 30 2018
Author: jsaustin

Action: joined, Tue Aug 28 2018
Author: carlson5

Action: joined, Tue Aug 28 2018
Author: zrbum

Action: joined, Tue Aug 28 2018
Author: willford

Action: joined, Tue Aug 28 2018
Author: jsaustin

Action: created, Tue Aug 28 2018
Author: sd
