

sdmay19-12: Automatic Solder Dispenser

Week 7 Report

October 15 - October 21

Client: Leland Harker

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

- Get cost estimates for extruder - Justin
 - Material for extruder was decided
 - Talked with Lee about aluminum vs. plastic
 - Got a quote aluminum extruder
 - Total cost will only be materials costs
 - Use waterjet to cut major profiles
 - Finish with the mill in Coover lab
 - Decided (with input from client) which material to use
 - Decided to use aluminum as material
- Write about mechanical processes - Kevin
 - Touchscreen should have several screens that explain how the mechanical components in the box work.
 - short description was written for extruder and cutter
 - Needed to be short because screen size is small
 - Attention span is also small, no one wants to read an essay
 - Includes pictures
- Write about different solder types - Zach
 - Touchscreen will display information about the different types of solder and when to use each one
 - Short description was written
- Finish driver board and order first parts list - Sam, Trent
 - Replaced screw terminals with pins
 - Powered connector needs changed to be flush with outside edge of box
 - 40-pin connector could not be reduced
 - Sent board to client

- Feedback: Do not include fiducial marks next time
- Don't include drill table

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
- Need sensor that can detect jams
 - Sensor needs to accurately detect when a solder jam occurred

Plans for Upcoming Reporting Period

- Program stepper motors, servos - Jason, Trent, Justin
 - Create code for stepper motors/extruders
 - Calibrate distance for stepper motors
 - Create code for servos/cutter
 - Test cutter and ensure it operates smoothly
- Research Pi display mounting - Kevin
 - We will need a way to mount the touchscreen to the box
 - Should look nice, shouldn't take up much extra space
 - We want as much viewing room as possible
 - Should be relatively cheap
 - 3D printing may be an option
 - Should be sturdy
- Find aluminum material for extruders and create extruders - Justin
 - ETG may have aluminum sizes on-hand
 - 0.5" and 0.18" needed
 - If not available from ETG, aluminum needs to be ordered

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Sam Willford	Managing schedule, reports, lightning talks	6	48
Jason Austin	Worked with Trent to figure out how they can simultaneously work on and divide coding	3	37
Trent Allison	Fixed PCB issues from client feedback	5	41.5
Justin Wheeler	Got waterjet cost estimates, decided best way to	4	39.5

	create extruders		
Kevin Carlson	Write about mechanical pieces and how they function	4	33
Zach Bumstead	Write about the different solder types (for touchscreen display)	6	31

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
