sdmay19-12: Automatic Solder Dispenser
Week 8 Report
October 22 - October 28
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

- Programmed stepper motors, servos, made adjustments - Jason, Trent, Justin
    - Created code for stepper motors/extruders
        - Calibrated distance for stepper motors
        - Tested code with basic control display
    - Created code for servos/cutter
        - Tested cutter and ensured it operates smoothly
        - Made mechanical adjustments to cams

- Researched Pi display mounting - Kevin
    - Needed a way to mount the touchscreen to the box
    - Client told us that mounting “bezel” is already attached to screen

- Found aluminum material for extruders and create extruders - Justin
    - ETG had the aluminum sizes we needed on-hand
        - 0.5” and 0.18” needed
    - Drawings were sent to waterjet lab technicians
        - Labor is free
        - Should be finished rather quickly
        - Major profiles of extruder will be cut on waterjet
            - Will be finished on mill in Coover

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

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Plans for Upcoming Reporting Period

- Solder motor driver board and test - Trent
    - PCB and components were received
    - Components need to be soldered to PCB board
    - If board does not work as intended, it will need debugged
        - Changes need to be made to designs if any mistakes are found

- Receive and inspect waterjet extruder cuts - Justin
    - Drawings were sent to waterjet lab technicians
    - Major profiles of extruder will be cut on waterjet

- Complete spool configuration profiles - Jason
    - When inserting a new spool, administrator selects which solder type it is
    - Admin interface must also be re-integrated

- Finish extruder cuts on ETG mill - Justin
    - After receiving waterjet cut parts, the extruders need finished on the ETG mill

- Create CSV file and program GUI to read it
    - Solder descriptions previously written need to be made into CSV file
        - This way they can be loaded by GUI
    - GUI needs to be programmed to load and set values in a CSV file

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Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Sam Willford	Managing schedule, reports, lightning talks	7	55
Jason Austin	Worked with Trent to figure out how they can simultaneously work on and divide coding	8	45
Trent Allison	Fixed PCB issues from client feedback	6	47.5
Justin Wheeler	Got waterjet cost estimates, decided best way to create extruders	6	45.5
Kevin Carlson	Write about mechanical pieces and how they function	4	37

Zach Bumstead	Write about the different solder types (for touchscreen display)	4	35

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
