

sdmay19-12: Automatic Solder Dispenser

Week 4 Report

September 24 - September 30

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

- Change GUI library - Jason
 - Changed to a better GUI library to make programming easier
 - Resizing buttons and images will be easier
 - Learned syntax
 - Tested servo and stepper motor interface
- Test stepper motors at 5V - Trent
 - Test stepper motors at 5V
 - See if solder can still be pushed through extruder
 - This will save us room in the box if a converter is not necessary
- Driver Board Layout - Zach, Trent
 - Reworked schematic for 5V motor power
 - Added parameters to parts in Multisim for BOM
 - Added headers and terminal blocks to schematic
 - Switched to surface mount capacitors
 - Connected motor headers to driver chips
 - Looked into creating a Pi hat instead
- Start hole patterns for box - Justin
 - Using designs, determined where holes in box should be placed
 - Holes used for attaching parts firmly inside
 - Hole placement is mostly finished
 - Needs to verify with Lee
- Figure out how to get more extruders made - Kevin
 - Worked on Inventor drawing, cutting size and angles
 - Minimizes complexity

- Minimizes cost
 - Talked to 3D Print Lab techs in Black Hall about printing more extruders
 - Can be done for \$20
 - Jason owns 3d printer and will try to create extruder
 - These will be used to ensure the improved design will work
 - Later we will create them out of aluminum

 - Layout of custom parts - Justin
 - Need to make sure components will fit in box selected.
 - Need to know where to place each component.

 - Project Plan - Sam
 - Create project plan rough draft
 - Specify schedules, designs, and project description
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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

- Rebuild database interface - Jason
 - Changed to a better GUI library to make programming easier
 - Database interface needs rebuilt

- Rebuild admin page - Jason
 - Changed to a better GUI library to make programming easier
 - Admin page needs rebuilt

- Driver Board Layout - Zach, Trent
 - Design layout in Ultiboard
 - Finish and order PCB design

- Update hole patterns for box - Justin
 - Using designs, determine where hole placement will be for spools
 - Holes used for attaching parts firmly inside

- Stabilize cutter - Justin
 - Trim down cams so that four bolts can be connected to each servo
 - Ensure it operates smoothly

- Figure out how to get more extruders made - Kevin

- Talk to 3D Print Lab techs in Black Hall about printing more extruders
- These will be used to ensure the improved design will work
- Later we will create them out of aluminum

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Sam Willford	Managing schedule, reports, project plan	11	32
Jason Austin	Changed GUI library	8	25
Trent Allison	Continued PCB design	10	24
Justin Wheeler	Finished layout of custom parts, continued hole pattern work	6	25
Kevin Carlson	Talked to Black 3D about making extruders	7	20
Zach Bumstead	Started PCB design in MultiSim	4	16

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
