Keegan Bess
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Weekly Recap and Future Plans

- Week Recap(1/5-1/12)

  This week I wanted to work on finalizing the parts list and working through the PCB design. I performed a fair bit of research to figure out the parts and read through the documentation of each one, debating between a few things but reaching a final list.

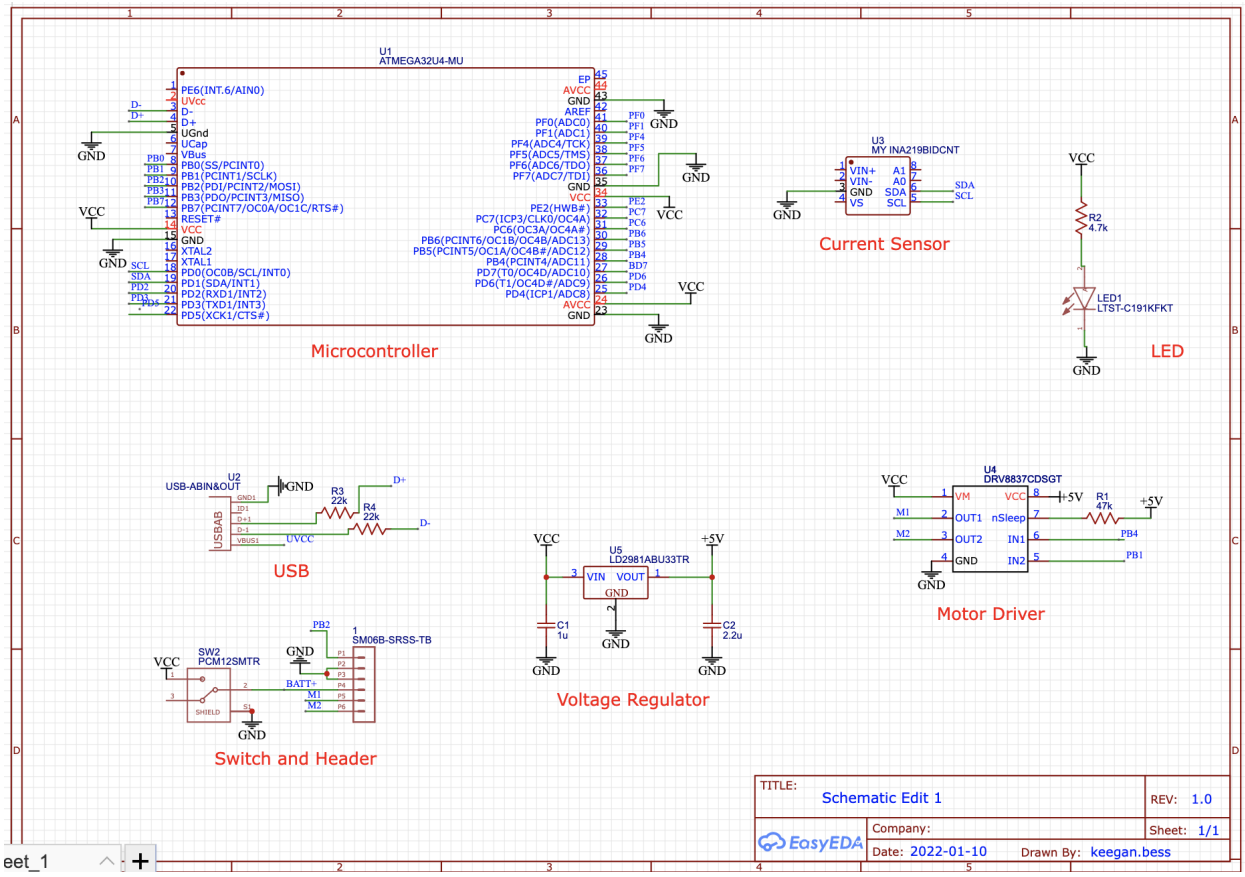
  Currently I do not have a wireless transceiver completed because I am unsure if there is a part that would fit the current housing. Also, ultimately the data that is wanted is the position of the needle itself so figuring out how to have a wireless transceiver sending position data from the needle itself is a difficult situation. So have to figure out if you want to sacrifice size for a transceiver module or if in this modification there can just be position data through the usb port for now.

  Below is the part list that I have compiled together:

Key:
Same
Change
New

Part Name	Specifics
Microcontroller	• Attiny85 => ATmega32U4 • Has more GPIO pins so that there can be more functions • Drawback: is larger in size
Current Sensor	• INA219 • Current Shunt with I2C interface • Find stall current of motor through data sheets of the motor • Place on ground lead of motor driver?
Motor Driver	• DRV8837 • Supply up to 1.8 A output current • Operates on supply voltage of 0 -11 V
Voltage Regulator	• LD298 • 100 mA fixed-output voltage regulator
USB	• Micro USB • Easier to program and using micro to minimize size
Miscellaneous	• Resistors • LEDs • Header Connectors • Switches • Capacitors

The following is my current work for PCB, it is unfinished as I'm working on the connections between the motor driver, the microprocessor, the motor and the current sensor. I am planning to go to office hours with a TA so I can ask a few questions and make sure I have the right idea.



- Future Plans for Upcoming Week(1/12-1/19)
  This week I want to finish my PCB design and get it looked over by the TAs for my class. I have a meeting with my TA tomorrow to discuss my progress and plans for the future weeks and also to ask any additional questions which I plan to discuss the connections between the current sensor with the rest of the circuitry. Once I figure out the PCB design and ensure it will work as intended, then I can purchase everything. I also would like to start working on creating pseudo code for the microcontroller. These changes will specifically be based around the current sensor and working on how to stop the motor based on stall current. To figure this out, I need to either look at the motor documentation to figure out stall current or I can test the motor with a multimeter in the computer engineering lab.

- Important Dates

Assignment	Due Date
Check In Meeting 1	1/14
Alpha Test Plan	1/21
Alpha Build	1/21
Check In Meeting 2	1/28
Alpha Test Report	2/4
Beta Test Plan	2/4
Beta Build	2/4
Progress Presentations	2/8-2/15

Assignment	Due Date
Check in Meeting 3	2/11
Check in Meeting 4	2/25
Preliminary Report	3/4
Check in Meeting 5	3/18
Check In Meeting 6	4/6
Production Release	4/6
Post Mortem Presentations	4/7-4/19