EWU IEEE

Sorter Project Meeting

Sunday, August 16th

Participants: Jaidon, Cody, Matt, Chris, Amy, Nhat, Michael

On track with next steps section of design doc:

(Copied from design doc on GitHub, highlighted notes are addressed items)

- Communicate current system design to user interface team **This needs to be done ASAP, a group meeting would be beneficial**
- Continue mechanical design: chute home switch mount, ~~color sensor mount~~ (Cody)
- Documentation for TM4C programming – setup tutorial **Cody needs to focus on TM4C setup this week**
- Prototyping various methods for interfacing: Stack light, UART, 7-segment, etc (User Interface Team) **Currently making good progress towards this**
- Hopper Design and Agitator Motor circuit design (Jaidon and Motor Control Team) **This is not a pressing issue, will be addressed later**
- MISRA C Style Guide PDF £10-20 (Amy talk to Uri) or "ReadTheDocs" designs – discuss in August 4th group meeting. **MISRA 2004 is free and what we will use. ReadTheDocs needs to be implemented**
- Start developing Camera interface (Cody, Matt) **Research into interface has begun, see below**

Schedule Changes:

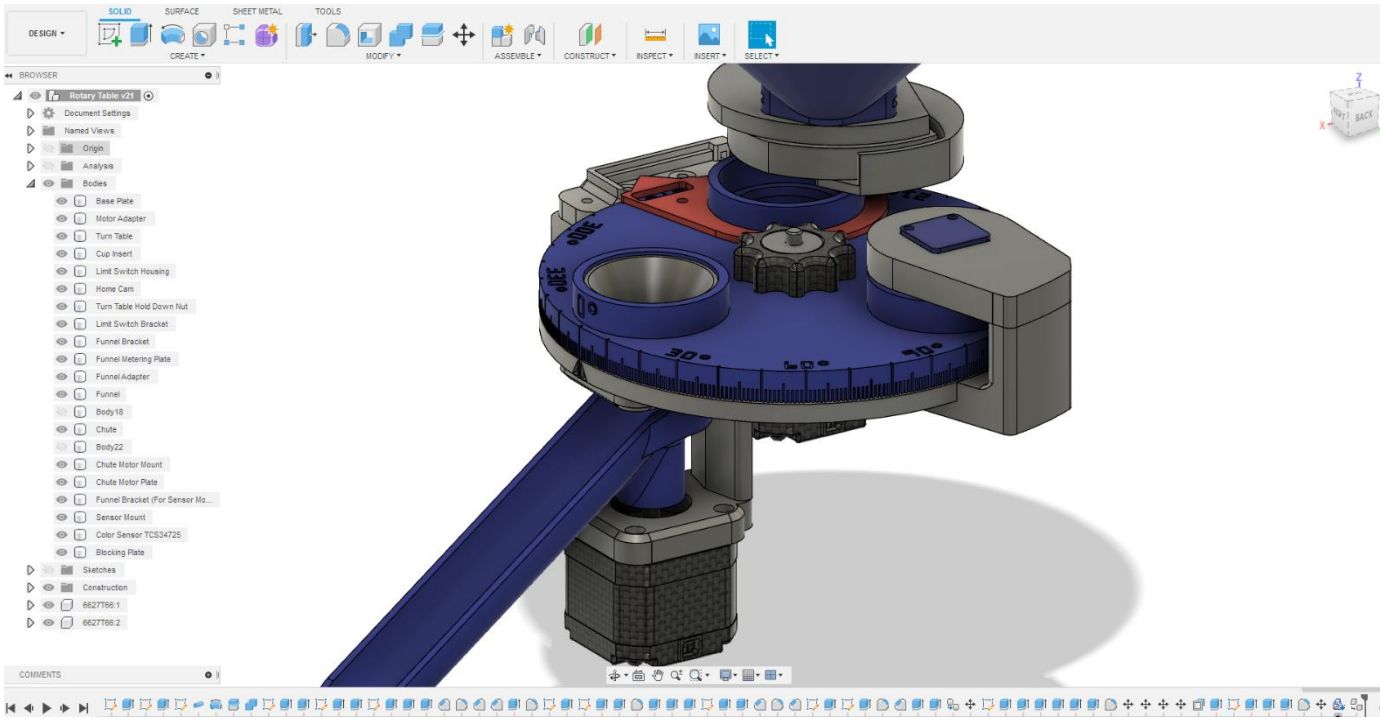
It was determined that more concrete development needs to occur in the Control System design before the User Interface Team can make any final developments. The user interface depends heavily on the control sequence, so the schedule was reworked to move the Controls design sooner and delay the User Interface completion deadline.

~~bench test color sensor to motor interface~~	8/2/2020
Design outline of control systems	8/30/2020
finished mechanical prototype	8/30/2020
Implement basic user interface	9/13/2020
integrate camera and image processing	9/27/2020

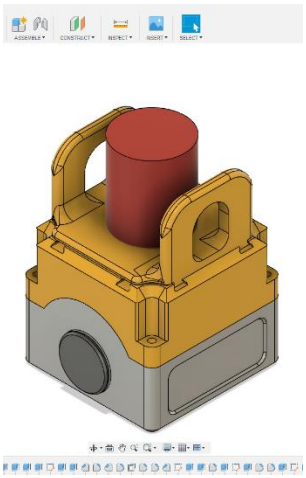
“Mechanical Engineers” (Cody in his free time):

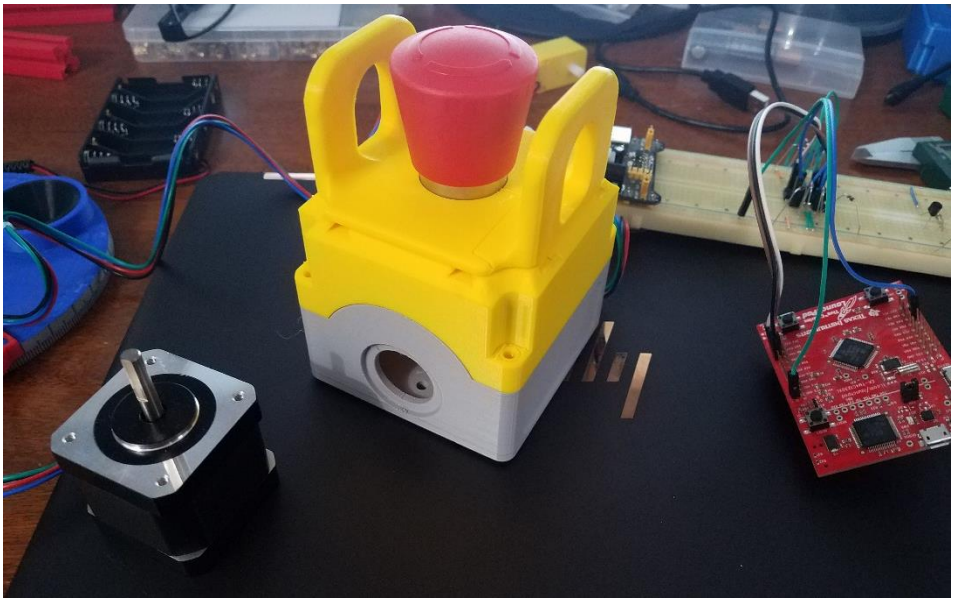
Documentation on GitHub: https://github.com/EWU-IEEE-Spokane/Sorter-Project/tree/master/Docs/Mechanical-Engineers

- Developed fixes to the mechanical design to permit passage of skittles following statistical analysis done by Matt and Michael: [Document]
- Added Color Sensor Mount, Motors, and other features:



- Created stand-alone E-Stop enclosure:





Sensor Team:

- put together documentation on I2C: https://github.com/EWU-IEEE-Spokane/Sorter-Project/blob/master/Docs/Sensor-Team/I2C%20Protocol%20Interface%20for%20ARM%20Microcontrollers.docx
- Started researching SCCB interface for cameras (similar to I2C) (see above I2C doc)

Motor Team:

- Has been researching pointers, interrupts and details about the compilation/linker processes
- looking into PCB design vs hand soldering for mounting driver circuits, KiCAD and EAGLE
- Tested lasted branch of I2C/Motor Control code, pushing changes to GitHub

User Interface Team:

Documentation on GitHub: https://github.com/EWU-IEEE-Spokane/Sorter-Project/tree/master/Docs/User-Interface-Team

- Developed FSM framework, setup breadboarded LED circuits, getting everyone up to speed with the hardware and the TM4C process
    - Limited by a lack of clear system design, need more inter-team communication
    - We could really benefit from making use of the debugger on the TM4C