ECE 212: Sprint Review, Retrospective & Planning report for Team 15

Sprint 4

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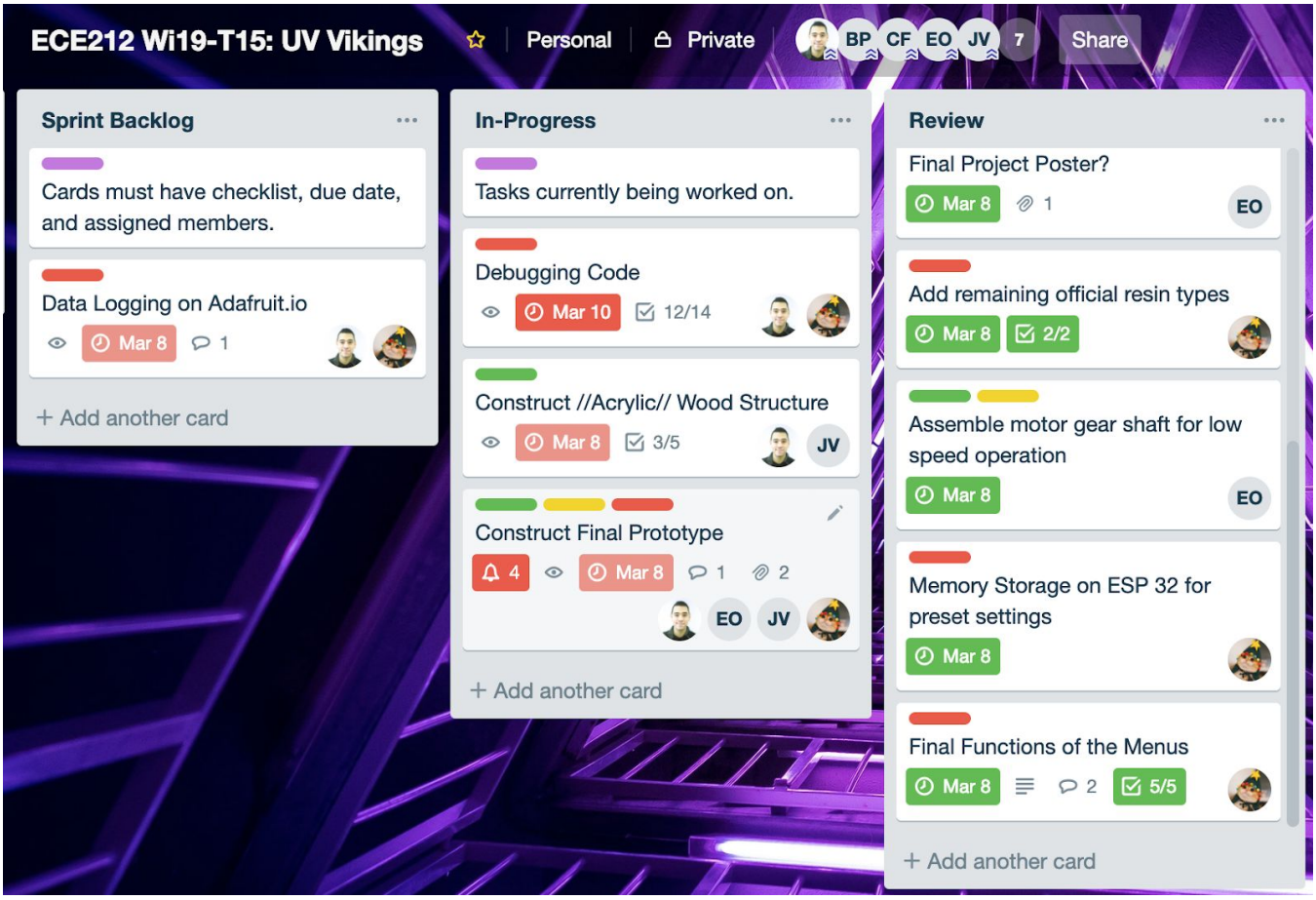
I. Sprint Review

Our goal by the end of this sprint was to have a completed functioning UV Curing chamber made with acrylic, that includes all major requirements.

Sprint Backlog Status

Sprint Backlog items DONE	• *Finalize CAD Model* • *Create Eagle Board and Final PCB* • *Complete Project Poster* • *Add official resin types* • *Assemble motor gear shaft for low speed operation* • *Memory storage on ESP32 for preset settings* • *Final Menu Functions*

Sprint Backlog items NOT DONE	Reason for NOT DONE	Keep in backlog (Y/N); why?
Data logging on Adafruit.io	*Not enough time to finish and too low of priority*	*No. It isn't crucial to its function, but if we end up with some extra time before the demo day we may implement it.*
Debugging code	*We continue to find new bugs or ways to improve things as we go along*	*Yes. The final product should be as bug free as possible.*
Construct ~~Acrylic~~/Wood Structure	*We were having trouble getting access to a table saw. We finally did the cuts we need on Saturday. The box is currently being assembled. The door also needs to be constructed.*	*Yes. We need a final structure.*
Construct Final Prototype	*Waiting on final wooden structure.*	*Yes. We need a product for demo day.*



Full Product Backlog Pruning

We do not plan on implementing data logging on Adafruit.io at this time due to time constraints. We also will not have email notification. Apart from these features, almost all other full product backlog items will be implemented.

Items still to be implemented

- R10) Door made of orange UV filtering acrylic.
- R13) Will include diagnostic features to test light and temperature control.

Technical and other difficulties

One major technical difficulty was getting the PCB board cut and made. The board was designed in Eagle by first creating a schematic diagram of the circuit and then using Eagle to design the trace routes on the actual board. The board itself was cut using one of the LPKF routers in the EPL. We ended up needing to create three boards. The issue with the first board was that I had used a particular size component in the design (3.5mm terminal blocks), but had accidentally purchased 5mm terminal blocks. The spacing of the holes were completely off so the board had to be completely recut. The issue with the second board is that we had used Eagle's autorouting feature to route the traces, and it makes the assumption that there will be through-hole plating. The EPL's router merely drills the holes, and thus there would be no through hole plating. The main issue with this is that it

is impossible to solder underneath some of the components to get a connection between the bottom and top layer of the board. The solution was to rip-up all of the traces and re-route the board by hand allowing the traces to jump from top to bottom in more accessible places where jumper wires could be soldered to connect the two layers. This board ended up functioning with some extensive testing.

One non-technical difficulty that we had was getting access to a table saw. The art department has a woodshop but apparently it is only for use for art students. The EPL doesn't have any tools that can cut wood at precise angles length-wise. We got around that issue by talking to people we know and we found Glenn LeBrasseur who had a table saw at his house that he was willing to use to cut our wood for us. Chuck went to his house with the wood and learned how to use a table saw to cut the wood.

During this sprint, Chuck learned a lot about how to use the routing tools in the EPL as well as how to use a table saw. Jesse continued to learn more about the usage of Fusion 360, and in particular how to use the inspect and measure functions to design a 2D file for use with the laser cutter. Matt also helped in this regard with Fusion 360 and continued to work with debugging the code for the menus and screen. Edgar learned how a DC motor can use gearing to reduce its speed of rotation, and also how to use software like Powerpoint to design technical posters.

II. Sprint Retrospective

We met during the end of the last sprint and listed all of the things we completed and what we had yet to do. We created cards in the sprint backlog and assigned them to each member with deadlines. Each member created a checklist of items to complete in their assigned cards.

Things that went well

- We made a lot of progress in all aspects and are very close to finishing!
- We met frequently during this sprint to get face-to-face work time to debug code and work on construction of the final product.
- Everyone worked equally during this sprint!

Things that could be improved

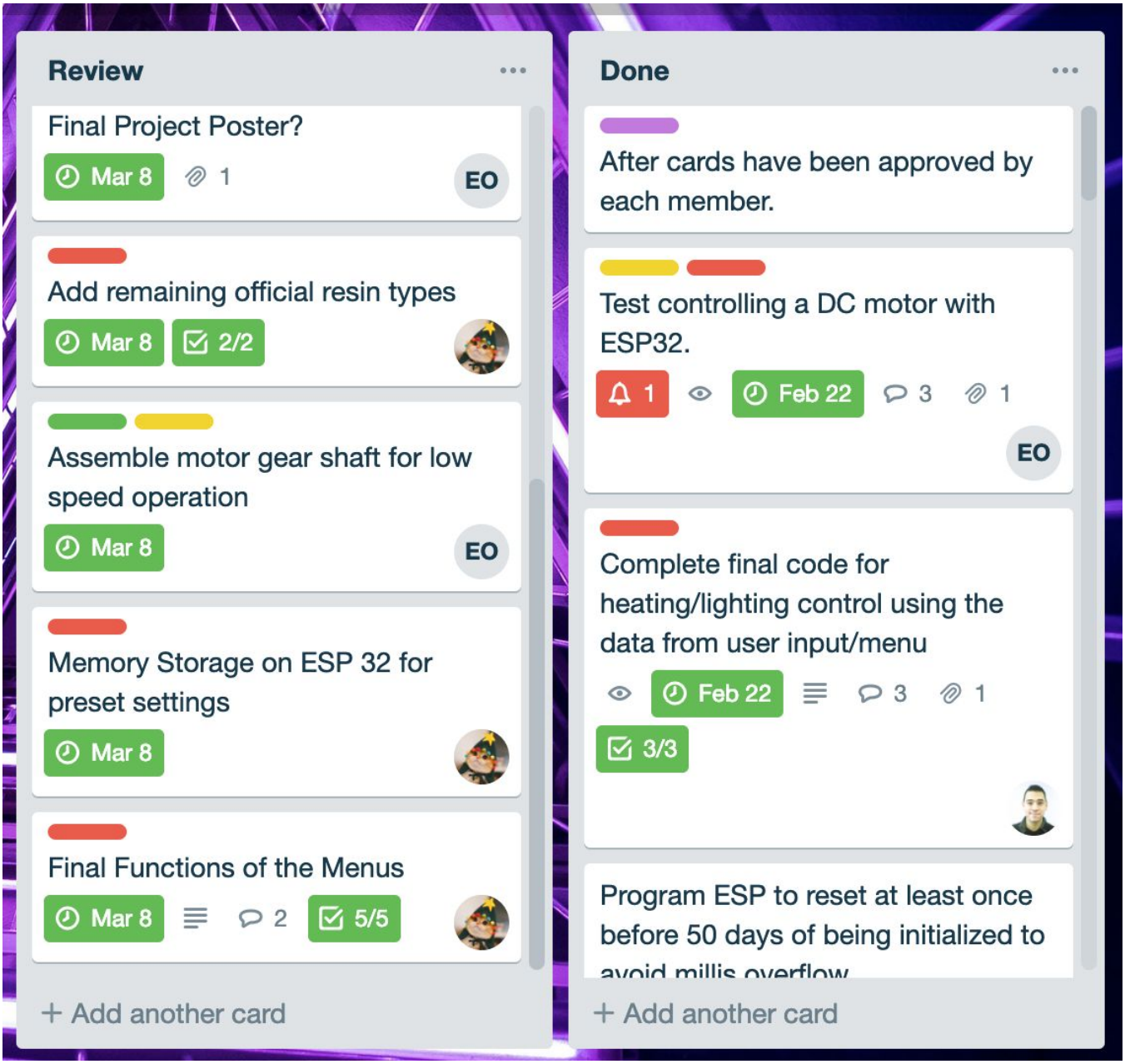
- We could update Trello more frequently

Suggested improvements

- No improvements needed other than updating Trello more frequently.

Trello

We might update Trello more frequently if we were to do this again. It often took a backseat to actually working on the project when we got together.



Overall, we would give ourselves a score of **4.9/5** for how well this sprint went.

Our team T15 met with our Scrum Master *Shahad* on 3/8/2019. All team members have read this report and agree that it accurately describes our discussion.