Hendrikse Jérémy

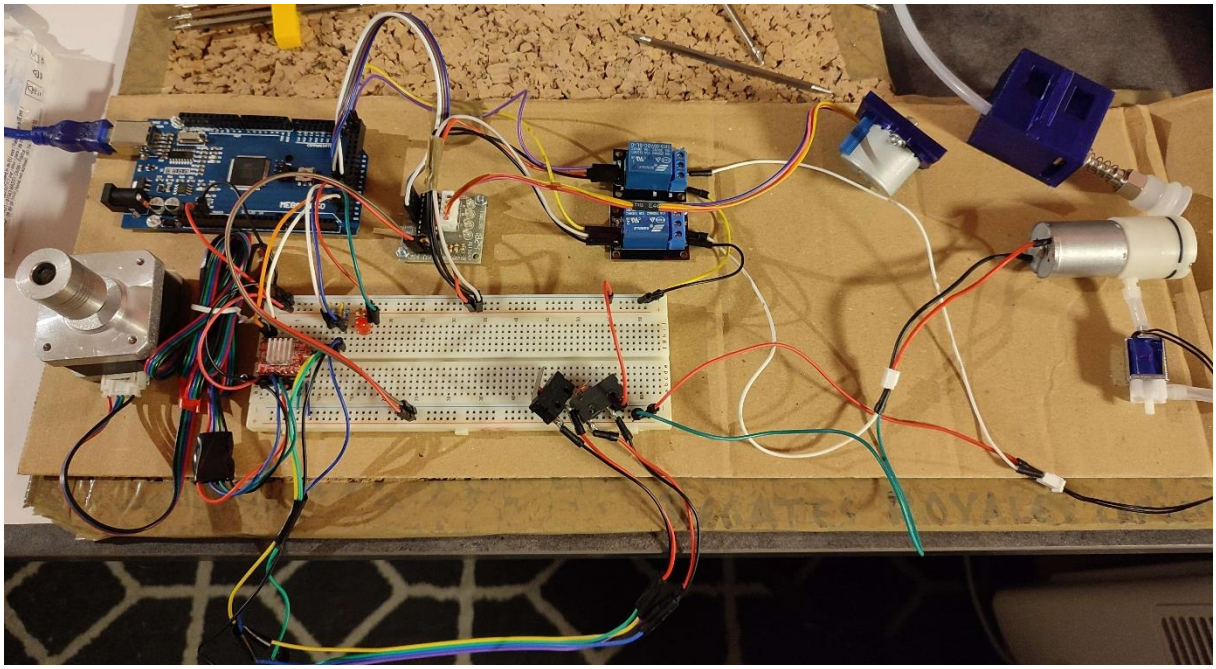
Session 2 report

During this session I've redesigned the part that holds the vacuum pump and the electro valve because the sketch in fusion 360 didn't adapt to the new dimensions. The 3D model of the platform is nearly done, so I started to extract some parts from the platform and sliced them in Prusa slicer, this process is to test specific designs and not print the whole platform. Also, the parts are printed with a very low strength because there only purpose is trying tolerances.

After I started the printing, I retrieved an Arduino Mega because I was getting short in I/O pins, I already needed:

- 2 for the NEMA17 stepper motor
- 2 for the limit switches that are situated at each end of the slider.
- 2 for LEDs that serve multiple purposes.
- 1 for the relay activating the electro-valve.
- 1 for the relay activating the vacuum pump.
- 4 for the 28BYJ-48 animating the suction cup.
- 2 for the limit switches at each end of the suction cup slider

Which already makes a total of 14 I/O pins. I started connecting all these components together, to the 12V source and to the Arduino. Also, to organize and better move the whole thing I screwed the components on cardboard (see the image below).



On the left we can see the stepper motor NEMA17 and its command module (red) on the breadboard, then the two limit switches for the slider on the center bottom. There also is the suction cup, the vacuum pump, and the electro valve completely on the right and the two relays controlling these on upper center. Finally, between the Arduino mega and the relays there is the module controlling the stepper (28BYJ-48) located left from the vacuum pump.

Finally, I tried uploading old code on the Arduino mega, but I had some trouble, access to the COM ports was been denied. After some short research I found out that it was because the Arduino IDE was still communicating to the Arduino threw other sketch that were using the Serial monitor.