

Trevor Decker

ILR05

Team B

The Monkey Bots

Teammates: Ian Rosado , Ian Hartwig, Steph Chen

Submission Date: Thursday March 19

Individual contribution

This past couple of week I have been working on finishing up the CAD design of the robot. Specifically I was able to finalize the design for the extension unit and begin work on the cleaning unit. Additionally I worked to test out the construction of a 3d printed string potentiometer which we found designs for online. The string pot is suppose to determine the amount at which the extension arm is extended. The design for the string pot can be found in figure 1. The idea was to have multi tern potentiometer attached to a spring and string from a retractable badge holder which we took apart.

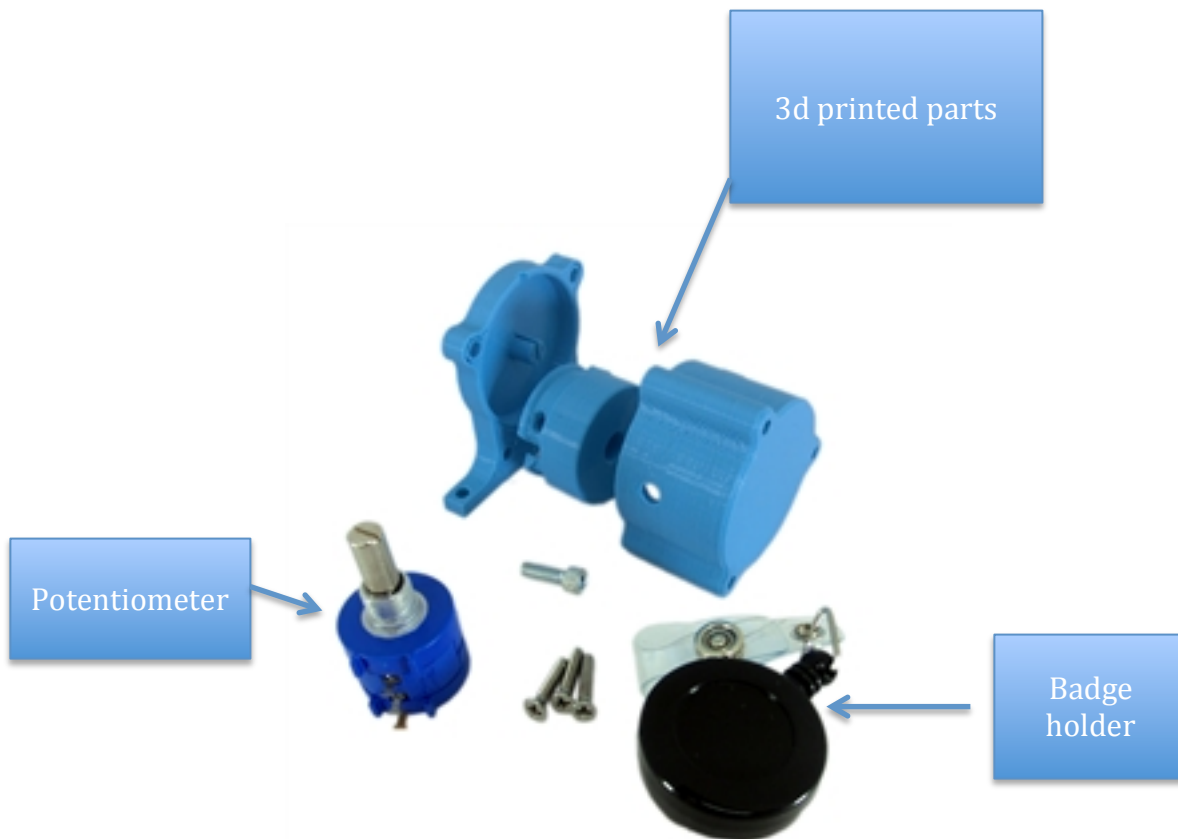


Figure1: the parts of the string potentiometer.

After putting together the string pot and reanalyzing our design I determined that it was not practical for us to continue with this design. The 3d printed part is not able to support high levels of stress from the spring. Due to this problem we determined that it would be better to find a replacement for the string pot that is more reliable.

Challenges

Challenges we faced this week were the fact that we only have 5 weeks until the final robot needs to work. So we had to start working faster and start to cut parts of the robot which seemed to be too difficult or risky (like the string pot).

Other challenges that the team faced were that the gripper currently can not hold the weight of the robot. It can only hold about 5lb currently and we want it to be able to hold about 20lb.

Teamwork

This week Steph worked on machining parts for the extension arm, she is about half way done with all of the parts that need to be machined.

This week Ian R worked on testing and optimizing the gripper so that we know how much weight the robot can hold currently.

This week Ian H worked on making sure that all of the parts we designed our machinable. Ian H also worked to get our st discovery board's advanced IO features to work. To show this he was able to print hello world to the boards screen.

I worked with all members of the team to refine the design of the final robot.
I worked with Ian H to order a gearbox for the pivot unit which he designed.

Plans

For next week we plan to continue machining the parts that we have designed so far. We will work to get the IO features of our st discovery board to be able to read from a sensor and control a motor. By a pwm signal.

For next week we would also like to be very close to finished designing the cleaning unit.