Work Completed

Monitor Lift:
To mount the rail support to the platform, we need L brackets. We purchased 4 L brackets. The brackets which will be placed on the back of the actuator will be cut off since there is no space to where they mount to the platform. Since there is only one hole left, we drilled 2 extra holes to secure it to the platform.

Image 1,2 – L-brackets and how they are attached to the rail support.

We received the monitor mount, images shown below. We drilled 5 holes on the wall mount support to mount this monitor mount to it.

Image 3,4 – Top and side view of the monitor mount
We successfully attached both rail supports to the bottom platform. The L bracket on the back needed to be cut down because there was no space on the platform to attach it to. Since we cut the L-brackets, there was only one hole left, we drilled an extra hole on each of the bracket. The bolts are a little bit longer; therefore, we need to cut them down.

Image 7,8 – 2 L-brackets being attached to the platform and the finished Monitor lift device.
Paint Cap Remover:
We use galvanized aluminum sheet to create the case for our device, where all the electronic components will be stored. We bent the side of the sheet to create a L shape which is attached to the motor’s plate by the long screws.

Image 9,10 – The encasement and up-to-date device structure

I did several tests on the device to test the functionality of the motor. Picture below shows how I wired all the components. Our AC/DC adapter has multiple voltage ranges: 1.5V, 3V, 5V, 7V, 12V, and a current of 300mA. First we applied 1.5V, the motor ran very slow or hardly moved at all. With 3V supply, the motor ran faster and it could turn the paint tube and successfully opened the cap. It was recorded that 60RPM. We noticed that we cannot control where the tube holder stops. It might stop at the angle that it is hard for the artist to remove the paint tube. However, due to the momentary button, the artist can keep pressing until he can remove the tube. It is not that hard to complete the task.

Image 11-12. Object in the yellow circle is the switch, object in red circle is the AC adapter.
Image 13 – Simple circuit of the paint cap remover.

Project Review:
For both the monitor lift and the paint cap remover, most of the mechanical works are done. The remaining works are filing, painting, and making everything is in place and safely operated.

Future Work:
Monitor Lift:
- Cut the bolts shorter
- Cut the extra section of the bottom platform
- Test out the functionality of the monitor lift as a whole system
- Implement the switch and other components

Paint Cap Remover:
- Implement the circuit
- Glue the foam to the bottom of the tube holder
- Make a long lever
- Cut the wall mount

Total hours worked: 13 hrs.