# Group Project: mechanical controller

Student Name: Nathan Saccary Week 3: March 28th – April 4th

## Thursday, March 28th ,2019

8:30 am,

The 3d model is still printing (34-hour print time) and I’m currently working on a revised version of the model if there is enough time to reprint.

11 am,

The 3d print has raised very slightly in the left-hand side, I hope it doesn’t affect the final product too much.

## Friday, March 29th ,2019

8:30 am,

The print is finished it came out with a few small imperfections but overall looks good. I’m going to work on trying to remove the support structures on the bottom of the model now.

10 am,

I managed to break off as many supports as I could, there are still very small and close together clusters on the grips that are near impossible to remove by hand so I will be dremeling the rest off.

12:30 pm,

All the supports are now gone from the model. The bottom of the model is very rough in texture due to the large amount of supports so now I’m going to smooth it down with sandpaper to make it feel good in the hands.

2 pm,

The model has been sanded down to a more comfortable feel and is now ready for the components to be fit inside once a riser for the wires and buttons is made.

## Saturday, March 30th ,2019

8:30 am,

Since the 3d model is done for now I’m helping James and Paul with the boards that the switches will go on as well as soldering the wires to the switches and analog sticks.

10 am,

I dremeled and sanded down the fiberglass boards we are using for the switch layout so they will fit inside of the model better. I’m now going to help James fit the switches inside of the boards with glue.

12 pm,

All the switches are now secured inside of their respective boards and are now ready to be soldered to the wires.

2 pm,

All the wires are now soldered to their parts. We are now looking for something to use as a riser for the switches, the Arduino, and the analog sticks.

3 pm,

We found some scrap wood that’s just the right thickness for the riser, time to cut it to shape and sand it.

5 pm,

The wood has been cut down to size and is now ready to be sanded to fit nicely inside of the model.

6 pm,

The wood is sanded as fits well inside of the model. The next step for tomorrow is to make the cuts in the wood for the wires and the components.

## Sunday, March 31st ,2019

I had a family function today so I was not present.

## Monday, April 1st ,2019

8:30 am,

Measuring the final layout of the board to create a cover for the components using the 3d printer. I’m going to create the holes for the analog sticks and the home + back button.

9:30 am,

The first print is done, the home and back button holes need to be farther apart as well and made bigger. The right analog stick hole is slightly too far to the right and both are very slightly too small. Reprinting with new dimensions.

10:30 am,

This print was better, the back and home button both fit well but the analog stick holes need to be moved up slightly. Reprinting.

11:30 am,

The buttons and the analog stick fit well now. I will now work on the d-pad buttons and the selection buttons; they both have the same dimensions but the angle at which they are positioned are different for both so it’s going to be trial and error to fit these. Reprinting.

1 pm,

Neither button clusters fit, the holes are a little small and the angles are off by a lot. Remeasuring and reprinting.

2 pm,

The d-pad buttons fit but not very well and the selection buttons are still off. Since there are going to be more of these test prints for a bit, I’m going to start printing them at .5 mm instead of 1 mm to cut down the wait time. Reprinting.

2:30 pm,

The d-pad buttons have a good fit now, but the size of the hole could be improved, the selection buttons still don’t fit due to the angle, but they should on the next print. Reprinting.

3 pm,

Both button clusters fit now as well and the analog sticks and the back ­ + home buttons. Touching up the positions of some of the holes as well and resizing slightly. Reprinting.

3:30 pm,

The cover has been finalized and now it is time to reprint the whole top cover for the controller. The height of the cover had to be edited to be 4mm higher to account for some of the button heights so I’m fixing that as well as splicing the cut cover on to the raised one.

5 pm,

The finalized cut cover has been created in fusion and is ready to be split into 2 separate pieces for the 3d print.

5:30 pm,

The cover has been split and both pieces as now converted to stl files and are ready to be printed (estimated time 5~ hours). Printing now.

## Tuesday, April 2nd ,2019

8:30 am,

Creating a list of games that would work well with the controller while being rated E/Teen at least.

10 am,

Jet Set Radio works great for the controller and its 3d which is a bonus. The binding of Isaac also works great by sadly its rated M so we can’t use it. We wanted to try Celeste but none of us own it.

## Wednesday, April 3rd ,2019

8:30 am,

More game testing today to prepare for the showcase tomorrow.

12:30 am,

We decided on 2 games to play during the showcase, Jet Set Radio and Touhou 15 (a bullet hell game with not that many inputs).

## Thursday, April 4th ,2019

10 am,

At our table in the tech showcase setting up our things and getting ready.

11 am,

We need internet to download the games we plan on using to best show off the controllers uses so that’s being sorted out currently. The controller is also not working as intended due to the Arduino code trying to upload without internet.

12 am,

Internet has been acquired and testing of the controller as well as installing games has commenced. We planned on using the game Jet Set Radio to show off the controller, but my computer had a conflict with running in for some reason (the game would close during its startup) so we are using Portal 2 instead.

6 pm,

The showcase is over, everything went great!