# Group Project: **USB Game Controller**

**Student Name:** James Poirier

**Date:** Saturday, Mar. 30

## Work Scheduled for Today

* Fit all the components into the 3d printed chassis

## Work Completed

* Found and cut a piece of wood to the shape of the model.
* Cut squares that where the size of the components into the wood to hold the components in the position we wanted
* Glued the components into place

## Work Comments and Results

* The depths and positionings had to be very precise to achieve the feel we wanted and fit everything into a limited space. Holes and channels (to route wires) needed to be carefully placed as to not affect the structural integrity of the wood.
* We quickly ran out of batteries on the power tools and used a hacksaw, and a hammer (separately) to cut the 2x4 of wood in half, then to shape.
* Ed and I developed a technique to save some time while cutting out the squares, using the drill it cut a series of holes then at the depth required, the Dremel to cut the edges of the square, a hammer to chisel/pry the square out, then more Dremel to smooth and square up what’s left
* For gluing the components, I used hot glue to get them stuck in a position I wanted then clear gorilla glue to keep them there.
* I was at school till from 1:30pm till 8:30pm

**Date:** Monday, Apr. 1

## Work Scheduled for Today

* Complete the controller

## Work Completed

* Helped Nathan measure distances and sizes for him to create a ‘top plate’ for the chassis
* Wired all the component into the teensy on the wood
* Tested every button and analog that I wired
* Glued all the parts together (and made a hole for the usb wire)
* Light sanding and cleanup

## Work Comments and Results

* At school from 10:00am till 10:00pm
* We only had a broken ruler, so we had to do a few test prints of the top before one fit all the components (mostly because we didn’t have a protractor for getting the angles. And no cords to get pictures off a camera) (this didn’t take up a lot of time though)
* I had to cut some more holes into the wood as I was wiring to make the wirers fit
* While wiring I wanted to make sure that there were nowhere 3 wires had to cross over one another. The vertical height was important because chassis was already to big for our liking making it unconformable to hold. If the keys where higher up it would make it worse. (I sacrificed some neatness for vertical space efficiently)
* I added small bits of glue to stop wires from moving around
* After testing everything I glued the face plate onto a riser, realized I didn’t make a hole for the usb to go in, made that and glued the whole thing together.
* I took the controller home because it was too late to stay at school and I wanted to test it again. I had the buttons inverted (so I couldn’t do test), and I forgot to take my thumb drive and/or upload the code to GitHub so I couldn’t fix.

**Date:** Sunday, Mar. 31

## Work Scheduled for Today

* Invert the inverted controls
* Test the controller in game

## Work Completed

* By inverted I mean that the windows would see the buttons as being pushed when they where not, and not pushed when they where being pushed. Inverting this was as simple as a few ‘!’
* The keycaps have some wiggle on the switches so I needed to minimally sand down a few edges because when you pushed in that direction on the keycap it would touch the chassis.

## Work Comments and Results

* I discovered that because I wanted both buttons on the analog to be facing inward (looked nicer) I had to invert the X axis of that analog

**Date:** Tuesday, April 2, 2019

## Work Scheduled for Today

* Chassis touch-ups
* Find a suitable game for presenting

## Work Completed

* Re-glued the edges of the faceplate
* Rounded the inner edges of the keycaps
* Made a list a suitable games

## Work Comments and Results

* I had only hot glued the top on incase a problem occurred; we had no problems, so I felt confident in clear gorilla gluing the top on
* A feature of normal controllers is being able to slide you fingers quickly from one button to the next. With the keycaps we had this was not possible because you finger would get hooked on the square corner. I sanded the insides corners of the keycaps to better allow your finger to glide between them (this was a huge improvement)
* Because the presentation was a public event, we needed to find a game that was suitable for all ages, ran smoothly, immediately playable(easy to understand), utilized both analog sticks (to show they work), and didn’t use triggers (because we couldn’t fit them on the controller) this was a lot harder then it sound.

**Date:** Wednesday, April 3, 2019

## Work Scheduled for Today

* Prepare for presenting tomorrow

## Work Completed

* The “funnest” game that met our criteria was Jet Set Radio, others where Portal, Minecraft, Pressure, and Celeste.
* Prepared a few pictures that would be added to our slideshow (we decided to have a slideshow of images on a monitor rather than a science fair board with cut out images glued on
* A bit more sanding was needed on some rougher edges

## Work Comments and Results

**Date:** Thursday, April 4, 2019

## Work Scheduled for Today

* present

## Work Completed

* present

## Work Comments and Results

* We didn’t pre install the games we wanted on Nathans computer (we used Nathans computer to present) this was an almost fatal problem, I did have other games on a thumb drive but they were ether games that used less than 3 buttons, or games that contained guns
* When we finally got Nathans computer internet to install the game we had picked out for showcasing, Jet Set Radio would not launch on Nathans computers (the executable did not run) so we installed our second choice of Portal 2
* Turns out, MS PowerPoint does not transition between slides if it is not the active window. Meaning we couldn’t play a game and have a slideshow. I thought of a way around this by using windows slideshow feature with images.