# Group Project: **USB Game Controller**

**Student Name:** James Poirier

**Date:** March 7th

## Work Scheduled for Today

* Have the second analog stick working
* Clean up code
* Comment code
* Sprint review

## Work Completed

* removed up old code.
* Commented code
* Learned about joystick controllers
* Assigned new tasks for the week.
* Sprint review

## Work Comments and Results

* I never removed any bit of test code I was adding, only commenting it out. Today I removed what I didn’t need
* I never commented any of the code because it was mostly just calling library functions, today I commented them
* Learned that on joystick controllers the analog stick at the top is called a hat switch, sometimes called a POV. This is because in most games it positions your camera in 3d space.
* The hat switch is a digital signal, 0-8 representing the degrees 0-360 in 45-degree increments.
* The hat switch is now the equivalent of the d-pad

## Work Scheduled for Tomorrow

* Have the Analog stick working as a Hat Switch.
* Have the breadboard using the key switches
* Help salvaging key switches from Paul’s keyboard

**Date:** March 11th

## Work Scheduled for Today

* Have the Analog stick working as a Hat Switch.
* Have the breadboard using the key switches
* Help salvaging key switches from Paul’s keyboard

## Work Completed

* The analog works as a hat switch
* Cherry mx black key switches have been recovered
* Talked about what to do with the clay model now.

## Work Comments and Results

* I needed to translate the X and Y values to a single 0-8 value. I can achieve this with 9 if statements (1 for each hat switch value) but I want to reduce it further to reduce input delay.
* The Key switches do not fit in the breadboard, they will fit a modified pref board

## Work Scheduled for Tomorrow

Create the project plan assignment. Prepare the sketch for demonstration.

**Date:** March 12th

## Work Scheduled for Today

* Create the Project plan assignment.
* Prepare the sketch for demonstration (add all 14 buttons, the 2nd half of the hat switch)

## Work Completed

* Finished the analog as hat switch
* Discover an update to the library I was using which allows for 2 joysticks.

## Work Comments and Results

* The library is <https://github.com/MHeironimus/ArduinoJoystickLibrary/tree/version-2.0>
* The library is free for copy and distribution if no modifications to the library has been made.
* Removed the code for the analog as hat switch because I discovered the library update.
* This discovery makes a lot of the work I’ve done yesterday for nothing, but it’s for the better
* **A lot of time** was spent reading the header file of the library to understand what to do.
* The Arduino Leonardo only has 12 usable digital pins, 14 input buttons is not possible the L1, L2, R1, R2 (PlayStation names) will have to be skipped for this prototype.

## Work Scheduled for Tomorrow

* Create the project plan assignment. Prepare the sketch for demonstration.
* Measure components for fitting them in the clay model. Which we plan to bake for our demonstration

**Date:** March 13th

## Work Scheduled for Today

* Create the project plan assignment. Prepare the sketch for demonstration.
* Measure components for fitting them in the clay model. Which we plan to bake for our demonstration

## Work Completed

* Converted the previous 1 analog sticks, 1 hat switch into 2 analog sticks
* Laid out how our perf-board prototype will be done
* A lot of work on the project plan
* Wrote this daily journal
* Cleaned up the files on GitHub

## Work Comments and Results

* I discovered an issue with the Leo. When analog pins are left open that get the same reading as the pin before it. A lot of time went into discovering this was the issue. I only have 1 analog stick soldered for testing and thought it was the problem.
* I measured out where the mechanical key switches will have to go on the perf-Board.
* Marked where the clay will have to be cut to allow for the components we have.

## Work Scheduled for Tomorrow

* Finish the clay prototype for our demonstration
* Sprint review

**Date:** March 14th

## Work Scheduled for Today

* Finish the clay/Perf-Board prototype for our demonstration
* Sprint review
* Assign next week’s tasks

## Work Completed

* Sprint review
* Converted what was 2 analog sticks each on their own controller to 2 joysticks on one controller
* Assign next week’s tasks
* Cleaned up old code
* Finished project plan

## Work Comments and Results

* Discovered how to have 2 analog sticks reading as only one controller. Previously each analog stick was reading as it’s on controller on the one device. This is what they do for flight sim games but there is a better way for our use case.
* The hat switch code from the 11th turned out not to be a waste of time; because I programmed it all relatively to variables, I just made the d-pad change those variables instead of the analog stick.

## Work Scheduled for Tomorrow

* Finish the Perf-board prototype to be functioning controller (all required buttons, single usb connection cable. Components temporarily secured to the model)