# FarmBot 2020

## Start of Project till 09/03/2020 (Month 1)

During this time period we had a rough start to the project because we were clueless on how FarmBot was meant to be operated. While talking with Vaughn about this we discovered a GitLab repository. We had a problem with this for the first 2 weeks because GitLab where the repository was hosted was down as well as we also didn’t know a username and password to get into and access the repository.

Once we gained access to the repo, we swiftly gathered the information we needed from it and transferred it to our personal 2020 GitHub repo. We discovered that along with our own testing that the first and biggest issue we faced was how do we talk and communicate with FarmBot. Very quickly discovering that the ports used and required by FarmBot were blocked on the Otago Polytech Wi-Fi. In the meantime, we did manage to get some physical work done, I managed to start and complete 4 out of 5 3D prints to help the longevity of FarmBot. We also started tiding up all the cables and loose ends and making the project as a whole more attractive.

## 12/03/2020 (Connectivity has been established)

FarmBot connectivity has been figured out and is functional thanks to a large amount of help from Jonathon in the Ops team who spent many hours figuring out many different methods of trying to connect FarmBot through Wi-Fi to personal devices. We had ideas from hot spotting from your phone which worked but we had data cap limits, hotspot the Polytech Wi-Fi from a raspberry pi, this ended up not being a viable solution because ports were still being blocked. Then Jonathon tried port forwarding to try and tunnel through the firewalls which didn’t work either. Then finally he had the smart idea of just reading through the pervious documentation on GitLab and found pieces to piece together a puzzle which then got us to connect farm bot over the network. (The steps to connect are on the GitHub page)

## 19/3/2020 (Dedicated laptop connection)

We now have a dedicated connection to farm bot over the eduroam Wi-Fi signal so anyone that wants to take to FarmBot can through the eduroam Wi-Fi. Rob also gave the team a laptop which we have set up next to farm bot so its always connected and ready for tinkering and testing functionality. I have been progressing and learning on the 3D printing and have made adapters/spacers for the top vertical motor cover as the ones printed were to short and put to much stress on the motor itself. Hopefully all 3d printing will be finished by the start of the week coming.

## 19/3/2020 – 21/5/2020 (New Zealand of lockdown)

New Zealand covid 19 Lockdown were have been away from class and the hardware room and our project farm bot for this entire time, During the lockdown we were tasked with working out and trying to use a virtual robotics program WeBot. This programme was to be honest a train wreck. Across all the members of our group we were unable to get the programme working. My experiences were that the programme would open up, then proceed to load all the example robots in the virtual environment then crashing completely to the desktop. There were 2 occasions where this didn’t happen and it would let me control a robot and ‘fly’ it in virtual space, but I was unable to edit or create any of my own code for these robots and after a proximity 10 mins within the application it would black screen then crash.

My computer specs that I tested this on are,

CPU – AMD Ryzen 5 2600x

GPU – Nivida GTX 1660ti

16gb of ddr4 ram

And this was installed on a ssd so there shouldn’t have been any bottlenecks of hinderances for the programme to run smoothly. I was unable to get the programme running with tinkering with its setting and windows settings like Administration mode. Nothing seemed to fix it or get it working as intended.

## 25/5/2020 – End of Semester

Touching up parts for FarmBot. I managed to get the final adapter made and installed on the Y axis mounts. Also we had a small side task of getting the CNC machines up and running. I started this by doing some research into what they were and if there was any documentation on them. This resulted in not much information. I was searching through the hardware room and came across on of the boxes the machines came in and inside was a cd. This turned out to house software used to control the machines. As well as a couple word docs and pictures on how your meant to sort everything out. Once I had found this information out it was time to start actually trying to get one of the machines working. This meant trying to find a power supply. But once we had power it was as simple as plugging in the power then connecting the machines to a computer and it was of to the races. Documentation of how to set up and get these machines is on the FarmBot 2020 git repo, under the readme or the website.