Project Deliverable H - Prototype III and Customer Feedback
GNG 1103 – Engineering Design
Faculty of Engineering – University of Ottawa

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Introduction:

Our third physical prototype was made with the intention of fully completing our objective at creating a seed disperser. We were able to complete this objective along with obtaining feedback from our customer.

Objectives for our prototype III:

As stated our main objective was to complete a fully functioning prototype of our seed dispenser. We created a seed hopper along with an arm to connect the motor top the seed hopper using SolidWorks and 3D printing it in the makerspace. We then also had to replace our motor with a smaller one because the old one would not run on the limited voltage of the arduino. Furthermore, we had to replace the breadboard for a protoboard at the request of our project manager. After we had all the final parts we attached and set everything up to create our final and functional prototype.

We were also able to obtain some feedback from Erin for our first and second prototype and implemented these suggestions into our third and final prototype.

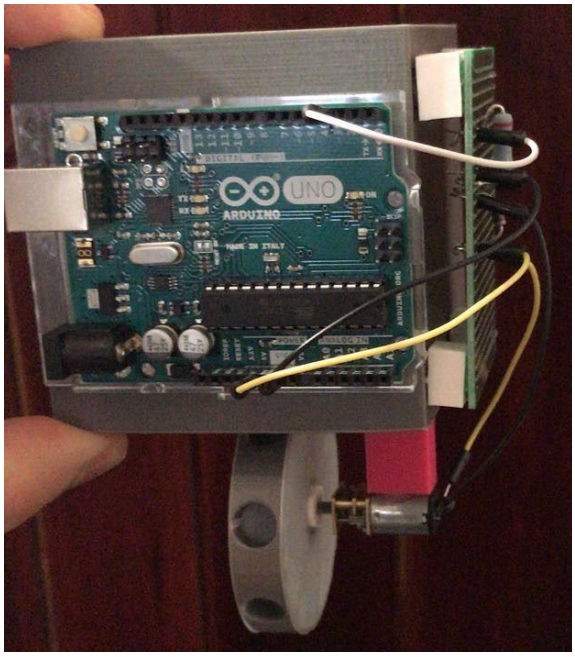
The results we expected from this prototype were all "Good" results. This is because this is our final prototype and we expected it to be fully functional. Due to our efforts, this was achieved and all the results were as expected. This was also thanks to our previous prototypes which allowed us to fix all of the issues that may have turned up in the final prototype.

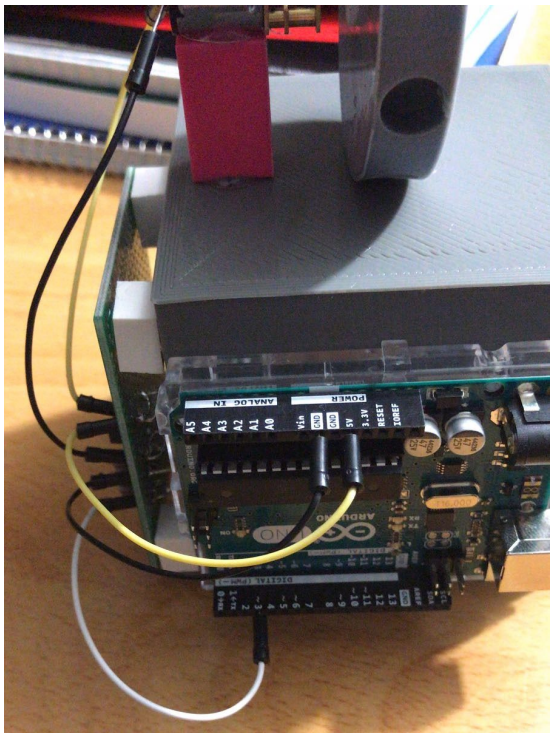
What and how will this happen?

We achieved this by using our materials and objects from our second prototype and further developed the objects we still required. We also used Erin's feedback to help develop our third prototype. As stated before, we built a seed hopper along with an arm and replaced the motor and breadboard. These allowed us to build our final prototype since we had already built part of it for the second prototype. With the feedback we got from Erin, we were able to fix some issues that may have turned up in the final prototype.

When is it happening?

It is being done on a week to week basis to make proper adjustments and assure the final prototype is fully functional.





These are our major components of our prototype 3. This is our final prototype and was constructed with plastic objects that have been 3D printed using the Ultimaker 2+ at the MakerLab and includes a seed hopper and the gear to disperse the seeds along with an arm to hold everything together. We have the attached all the electronics and circuit boards onto the seed hopper to make the whole system self contained and easily maneuverable. We then attached the arm onto the hopper and to the motor which holds the gear, we then attached the wires onto

the motor. This allows the motor to spin the gear freely and allows us to dispense the seeds. This entire prototype cost us just a tad over 100$ and this is due to the fact that we had to replace the breadboard we purchased with a protoboard at the request of our project manager. If our project manager had told us this before we purchased the breadboard we would have remained below the budget by quite a bit. Nonetheless, we achieved our goal at building a fully functional seed dispenser.