GNG1103 C-09

Leandro Dantas, Dylan Flejszon, Connor Ryan, Garret Ulrich, Yazeed Ibrahim

Deliverable H: Prototype III and Customer Feedback

Introduction:

This deliverable will discuss how the original project plan is being followed at prototype III. The new developments in our model and the new materials will be examined in this report. The feedback received from prototype II is going to be analyzed in this report specifically the steps that need to be taken in order to incorporate the feedback into the group's next prototype.

Prototyping Test Plan:

When designing Prototype III our group was focused on the whole system in general, that being said we did improve our working circuit subsystem. We do not have a photo of our final model that will be ready for design day. . Some changes have been made since we demonstrated our 1st prototype in front of the client. Our circuit can be fabricated after design day to look more professional.

Prototype III is about the refinement of the overall design however, we were able to improve the circuit since our first showing to the client. Like was said in Deliverable II, we not only focused on finding a way to alert the user when the tank needs to be filled, the team found a way to make the system more expandable and differentiable. Figure 1, 2, 3, and 4 all show the model of our final circuit that will be implemented.

Figure 1: Board with IC to control operations

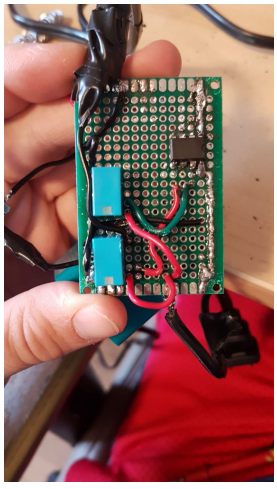

Figure 3: Circuit board to control lights, sensor and pump

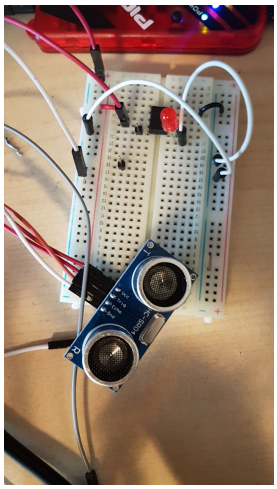

Figure 4: Clampable Lights

Figure 5: Pump

Throughout our design process with the last two main project deliverables we have gone from using gutters for the waterfall to using PVC for the model we show on design day. This ease of finding PVC is greatly encouraged if the product is to be manufactured. As was said before the option for printing a prototype and reducing costs is a 3D printed model. We have found a way to make our model cheaper by printing bigger stands for the wooden legs to sit in. If wood is not desired by the judges on design day we can go for a more professional look on the frame like using steel when and if the product is produced.

Test Objectives:

There were no test objectives in this period as they were done in deliverable II.

Customer feedback:

We have not seen the client for this deliverable thus, we do not have feedback. However, we are still using the previous feedback that was given to us and incorporating it in our system.

Refinement of the design:

As discussed earlier, the future and final prototype we are able to run code through the IC of our circuit that operates the pump, lights and sensor.. We have refined the design in terms of using 3D modeling for most of the prototype as discussed in deliverable G. Testing was initiated to determine if using the ultrasonic sensor is the best route to take for measuring water levels and it was a success.

Conclusion:

In conclusion, the group has followed our exact deadlines proposed in the deliverable F. We are all on track to building a working prototype that can be implemented in any hydroponics system. If chosen to be the company's next system, it will be customizable to any user's needs.