

Final Reflection

Laura Dickinson: SupaGroup (InfraRaid Laser Tag), Charging Station

Learning

Before this class, I had no experience with wiring and the idea of coding made me feel a little sick to my stomach. However, this class and especially this project has made me excited about coding again. It was so rewarding to see the code come to life and actually create a product. For the charging station, we added a touch element, so I got to work with capacitive sensors. I'm still not exactly sure how they work to be honest, but triggering a reaction just by touching a wire seemed like magic and was almost thrilling to test. There are so many ways this technology can be applied, as seen in another group's project. Additionally, I would like to learn how to work with the IR sensors and laser cutting after seeing how they were applied in the other parts of our project.

Success

Overall, our team was very successful. We were able to create a functioning laser tag team and components did work fairly seamlessly together. It was really cool to see it come all together in the end, because we mostly worked in our individual teams, aside for trouble shooting with the xBee messages. Due to time, we were not able to make a model that had two teams. However, at least in the charging station team I was a part of, we did set up our systems to support this if we decided to build another gun and vest in the future. We had a little trouble with choosing a topic in the beginning, but once we decided on laser tag, we were all excited about our project and this showed in our work.

Contribution

As I mentioned previously, each terminal worked separately from each other, other than trouble shooting the xBee messages in class. John and I were kind of the perfect team because each of our skillsets complemented the other's. I am better at the big picture stuff (brainstorming ideas, talking through ways to fix problems in our code, working with the physical pieces, etc.), while John has more experience with coding and is good with the details. When one of us would get stuck on a particular piece, the other would happily step in and try to work it out.

The capacitive sensor was my baby on this project. I wanted to include this electric globe that the user would touch to charge the gun in addition to the gun being close to the charging station (using the hall effect sensor). I got a little bit of help from Anastasia in the beginning on how to use the capacitive sensor, since her group was using it in their project as well. In the end, we unfortunately had to get rid of the globe. When turned on, the electricity inside the globe interacted with the electricity running through the wire, interfering with the reliability of the capacitive sensor. I created a stand the user would have to rest their arm on (and therefore on the wire) in order to reach the globe, but the globe had to be too far away to be comfortable for the user to escape the globe's effect on the capacitive sensor's reliability. Overall, I was surprised by how sensitive this feature was. No wires could be close to the wire that was reading the capacitive input. In

hindsight, some sort of pressure sensor would have probably been a better option. Despite having to stray from how we envisioned the final product, I am still very proud of what we created and how all of the components in the larger group came together.