Career Readiness Challenge

This is our application for eligibility for the Career Readiness Challenge. The question is: **How does a professional's use of the design process match yours?**

Our use of the engineering design process is similar to the way a professional uses it, with some differences. We note four similarities. The first is that we collaborated in a way that is similar to how professionals collaborate. Second, how we spent a lot of time strategizing for each step of the design process. Third is that we managed our time and planned for many things. We also set goals for ourselves. For our fourth similarity, we prioritized our goals to make sure we focused on the main goal first. We also note two differences. Although they follow the same engineering design process, professionals work on much more complex problems which need a lot more time to solve, more special skills and even more collaboration. Our fifth reason is that we researched and processed our ideas in an organized way just like a professional engineer would research

Our use of the design process is similar to a professional's use because of the way we collaborated. For further example, we sketched designs and strategies and did fair tests to make sure we observed and tested a lot of ideas. After experimenting with these strategies and ideas for building, we would decide which idea would be the most efficient and effective. We would spend a long time thinking and brainstorming with our teammates. If we had a disagreement between the team we would settle it by sorting things out and compromise a deal in which all ideas were considered and added. This would help teamwork.

Another example of our use of the design process being similar to a professional's use is our time spent on each topic, as well as our time spent on thoughts and ideas We always made sure we were putting a lot of thought into everything we did to our robot and every change we made to our notebook. We always would communicate any other suggestions and thoughts on any topic. We also would meet up after school at our houses to discuss our strategy and drive for practice. We also did this for 3 weeks every day for 1 hour and 30 minutes. Not only that, we sacrificed and skipped other extracurricular activities to spend more time strategizing. On every step of the design process we would reflect on our robot and on our notebook to see if what we did was the best choice we could've made.

Our way of using the design process is similar to a professional's use because of our time management and our organization. For example, we would spend time thinking about how we will spend our time and making a schedule. We also would make goals for the day and try to achieve them. Even on days where we couldn't build, we always would remind ourselves of what we needed to do, and any other notes. We discussed our time management between our team. Even small things like our basic time management would get our attention and we would strategize our management of time, and resources.

For our fourth reason, we made sure to practice and work on only the elements we needed the most practice on. For example, if our driving had some problems and we needed some help and practice on it, we would practice that the most so we could get better. This also influences our third reason implying our time management is well-decided. We would

always know that making sure to practice only on the important aspects of the game is crucial to making sure we are as good as we can be.

We also compared our robotics project to professional projects such as the Tesla bot. When we saw the recent video showing the second generation tesla robot Optimus picking up an egg and folding clothes, we were amazed at the special skills required to design, build, code and test the robot. The professionals spend years building the skills in various areas. Without the skills, it wouldn't be possible to follow the steps of the engineering design process. For example, to generate ideas for how the robot hands can grip an egg without damaging, the professional needs skills in mechanical engineering and coding. When a project takes many years to complete, and the team is big, then the professionals need to collaborate in a special way to combine their skills to solve problems. Even though this project takes months, not years, it still is similar to our method and to how we collaborate together.

We researched lots of different things and took notes on the ideas' common constraints and criteria. We took these notes and discussed them as a team to make a final idea. We would then modify or add things to the idea in order to master the idea. Professionals would do almost the same thing but they would have more materials. We made sure to stay on track on the design cycle to be the most efficient and make sure we don't miss any important details or constraints. While doing research, it's easy to end up copying a design, but we made sure we modified most of the design of the robot.

In conclusion, our project helped us work together in a team and follow the same engineering design process that professionals use. GIt helped us

appreciate the challenges professionals face. We understood the importance of the various subjects such as math, coding and science and how important they are for careers in robotics and engineering. The fun and success we had gave us motivation and confidence to keep pursuing our goal of a career in robotics.

This was our application for the Career Readiness Challenge and we put a lot of effort into this. We hope you enjoyed reading and judging this essay.