Team Z, Centennial High School

12/29/23

Reverse Engineering Challenge

Hello, We are Team Z from Centennial High School, In Bakersfield California, presenting the Reverse Engineering Challenge for the RECF online challenges. On Team Z We have; Evan Scott (I am Writing this), Lindeman Vinson, Baron Risner, Isaac Franklin, Fox Gonzales, and Wesley Rahder. We decided to reverse engineer a toaster because we were all curious about how such a simple household object has very many small components to make it so complicated. (We also really love toast)

Upon the start of the procedure, we found that there were many different components that belonged to the toaster such as springs, screws, heat wired, and electronics. There were parts of the toaster that seemed very unimportant, but played a big role in how the toaster works as a whole. Such as the springs. The springs were led by the electronic timer inside the toaster to be allowed to be timed perfectly along with the heat wired to perfectly crisp the toast. It is amazing how every piece of the toaster works together. There was even a speaker that gave a chime when the toast was done toasting. Even though that part does not help with the “toastabillity” of the toaster, It is still a neat addition to the kind of toaster we had purchased.

In this picture, it is clear to say that we had taken the toaster apart to examine it. We found that all of those parts above were found inside the toaster. The box looking metal that you see is the cavity for the toaster, it, along with the heat wires hold it in place as it is being toasted. And, after the timer expires, the springs unlatch and retract bringin the toast upwards and out of the toaster. This project was a great experience for my team as we found a greater appreciation for the small electronics all around us because I had failed to realize how important these things actually are until we were taking this toaster apart. I had no idea what went into these simple machines that made them more than just Simple machines. I now wonder what else I have been overlooking as just a small electronic device. As this was the reverse engineering project, we tried to put the

toaster back together and we found out that it had worked!

My Team had successfully put the machine back together. In this picture you can find that the toaster looks untouched as compared to the last one. Overall, I think this was a great experience for my team and I. It helped us gain an understanding of the electronics in the world around us.