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Lab 8: Toaster Oven

This lab was about state machines. Many different things went into it, toggling LEDs, switching states based on button press times, and cooking mode switches. The main purpose of this lab was to learn about state machines and switching states. We did this by having three different cooking modes in which time and/or temperature could be changed. The change in modes was dictated by how long one pressed button three. A long press changed cooking modes while a short press switched between setting the time or the temperature. Button four controlled cooking. A long press put the machine into cooking mode and began counting down the timer. A short press stopped cooking and reset the timer.

I approached this lab by first reading through the lab manual. I then moved the necessary files, and started filling out the provided template. I had a lot of trouble with writing errors in this lab. I had too many things trying to work at the same time and had to figure out how to slow everything down and make it so the Nucleo was not overwhelmed with requests. While everything else was having trouble, my text formatting seemed to work well. Even if nothing else was working, my OLED would display the mode, time, and temperature. If I were to approach this lab differently, put more time into making my lab functional. I was not able to use my time accommodations so I did the best I could, but I think more time would have allowed me to submit something better. I would also work with others to get things done faster and be able to better understand what was happening.

Overall, this lab turned out okay. It mostly works with a few small things that could be improved. The ADC is very sensitive, making it tricky to set a specific time and temperature. The oven graphic was also not correct and did not change when cooking started. Sometimes you have to play around with the buttons to get things working, but other than that I was happy to get most of it to be functional as it was very difficult for me. It was a worthwhile lab and if I get time I would love to go back in and try to make it work. The lab manual was very detailed and helped me get started.