Massimo Ginella
CS24 Elementary Computer Organization
Second Arduino Lab
Lab time: 16 Hours
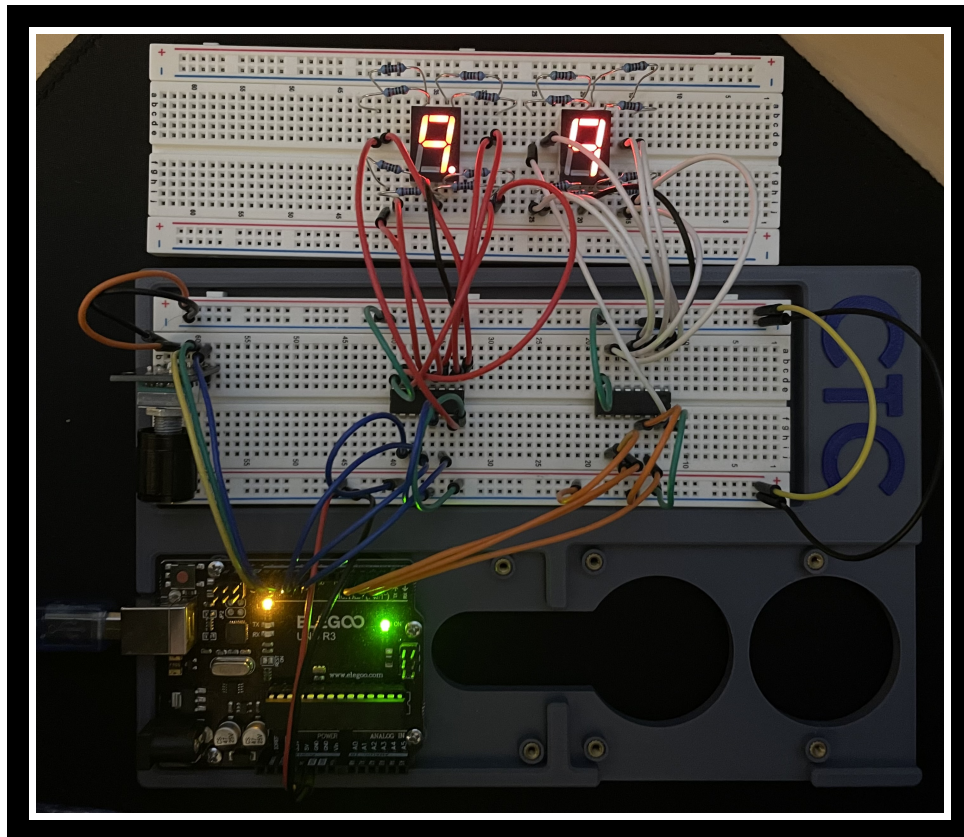
Its Not a Bomb Countdown Timer:

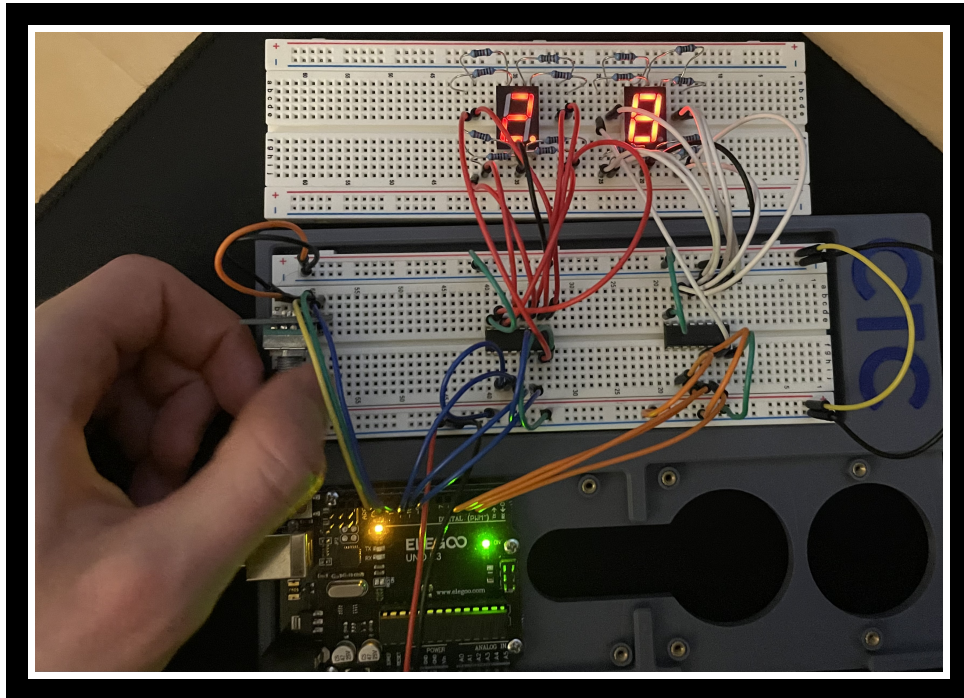Figure 1: Wiring view with the timer initialized to the maximum time.

Figure 2: Utilizing the rotary encoder to change the value of the timer.

This lab was certainly a big step up in difficulty from the last one. It was difficult grasping how each piece of hardware worked before I could utilize it in the lab. I spent a lot of time mapping how my outputs from the shift registers would connect to my 7-segment displays regarding the binary sequences that would be utilized to represent the numbers 1 - 9. I found the PDF's linked in the assignment description to be a great help regarding circuit diagrams for each piece of hardware. I really enjoy these arduino projects as I find picking the configuration of all the wires to be really satisfying. I encountered quite a few bugs during this lab. Most notably, the push button feature on the rotary encoder was not working with the code that I wrote. To fix this, I used a bunch of Serial.println() functions to debug where the signal was going in my code and eventually fixed the issue. After a lot of trial and error, I was eventually able to complete the lab in its entirety with all the specs. It felt incredibly satisfying having each feature of the build work 100% of the time! I really enjoyed this class as well as these labs and I will certainly be starting a bunch of arduino projects over winter break!