

E-Squared Timer/Counter Executive Project Summary

The problem to be solved here was to create timer, that could at least count down from 60 minutes to 0 and could count down any minutes or second in between. This timer had to be able to count down with accuracy of no more than ± 1 second for a count down from one minute. Upon the completion of the count down a tone must sound that is at 440 Hz ± 1 Hz. The display on unit must be easily visible, at a reasonable distance and have a variable brightness display. The labels for the controls on the device must be easily visible from 3 feet of distance. The additional thing is the volume of speaker must be adjustable.

Our group began tackling this problem by dividing the problems up into simpler blocks and deciding which of the block we should each be responsible for, during this time we also tried to figure out what materials would be available to us because that generally affects the design of the project. Edward took the programming of the boards, the pin selection, and some wire design. Edwin took the PCB design, the design for our enclosure and some of the wiring as well. During the early stages of the project, we made sure we had all the equipment and that it function properly. We worked on the projects making sure to meet deadlines and check offs. We ended up having some issues toward the end which lead to nearly complete redesign of the project, the code, and the enclosure toward the end of the project.

The key lessons our team learned from this project is time management because Edwin is family man with a child, he had to balance to family life and obligations with doing this project. Edward works graveyard shift 32-40 hours a week, he had to balance that with school and find time for sleep. Our team with the issues we had ended up putting in long days like most groups to make sure things get done, this disrupted the balance. We also learned about several other things including PCB and their design, and some about programming because it had been a while since either of had programmed and that had to come back and we had learn what we needed to get this done as well as some new things. We also had enclosure design which fell apart in part to our redesign, basically we made do with what we had. We learned how to adapt to issues and solve problems we never had before, and it paid off.

Project Timeline

