The original purpose of our project was to create a small, lightweight device that could help someone keep themselves on track during their yoga session. Along with this, the device needed to work off a battery, have a capacitive touch screen, multiple timers running at once, and two notification modes to offer a quiet session if the user wanted it.

After meeting with our project partner and getting some advice, we put together a list of requirements for the project. We then made a preliminary block diagram and started researching the best ways to solve each block. Then we had to make sure all of the individual solutions for each block could work together. We then ordered some of the parts and started testing to make sure they worked how we thought. At this point we realized the screen we had ordered was in fact not compatible with the rest of the system as we had designed it, so a new screen was found and ordered. The electronics for the battery block was an iteration of a design from fall recitation, so it was developed as a separate PCB. Then we re-designed everything for the final version. We spent some time iterating on the design. Eventually we were ready to finalize the design and order the parts. When it came time to assemble the final microcontroller PCB we were having trouble communicating with the programmer chip. After some trouble shooting, and with the deadline fast approaching, we decided to use our test equipment to construct a protoboard. This protoboard mostly worked, but the repeated process of de-soldering and re-soldering seems to have damaged the accelerometer, which took the device's ability to work as a pedometer with it. Then the finished protoboard didn't quite fit into the enclosure, causing it to exceed the size constraints we set. At the end of the day it still worked and we managed to pass our final inspection.

This project helped us to realize that even though our learning as students is coming to an end, our learning as engineers is just beginning. Throughout our project, we learned several key things that we will take with us throughout our careers. First and foremost is that prototyping and testing are completely different from each other. While prototyping can be done using similar components, it is more of a proof of concept rather than an actual design. Even when we know our prototype succeeds, that does not guarantee that it will pass our testing. We saw this significantly during our integration testing. Another important learning moment for us was how important it is to triple check documentation before finalizing an order or design. Simply misreading or misunderstanding a line in a data sheet can cause waves of problems for a project further down the project cycle. Lastly, meetings easily make or break a project. When our project began to have issues and each of us were stressed, holding quick meetings where we went over all of the points of our project at the moment helped us to stay motivated and on track.

Project Timeline

Task	Fall					Winter					Spring				
Documentation															
System Block Diagram															
Individual Block Design															
Part Research															
PCB Design															
Enclosure Design															
Design Impact Assessment															
Block Testing															
System Integration															