Team 15 Real Time Golf Swing Tracker: Team Contract Fulfillment

Ryan Leuba, leuba2 ; Ki Jung (Ben) Kim, kijungk3 ; Tamir Battsogt, tamirb2

Project Goals

In the beginning of the semester, our group proposed to build a Real-Time Golf Swing Tracker consisting of a sensor system and a mobile application that analyzes golf swings. The main goals to this project were to incorporate accelerometer, gyroscope, and force sensors into the golf club to obtain data for analysis in the mobile application subsystem. In addition, we needed for the mobile application to collect, analyze, and display data within 45 seconds of successive golf swings. Lastly, we required the total weight of the golf club to not exceed a 10% increase when the PCBs were attached to it. Our first goal is currently being met, as attaching and testing small components, such as the IMU and the USB-C receptacle, on the PCB has been an obstacle, which we did not deem a problem initially. Soldering these small parts created bridging effects when baking them in the oven, so we decided to hand solder the small parts. Moving on, our second goal has been met, as the mobile application sends data within 45 seconds, which categorizes as real-time to our team. Lastly, our last goal has also been met, as the enclosed PCBs do not add more than 10% of the golf club.

Expectations

All team members have been following the basic ground rules proposed in the "Expectations" section of the earlier proposed team contract. Furthermore, we have been following the proposed schedule, but the schedule got delayed due to modifying our PCB layouts in which we could not

attach our parts onto the first and second rounds of PCB orders. Other than this, we have been working according to our established schedule.

Roles

Ben and Ryan continue to work on electrical tasks, while Tamir handles programming tasks. As the semester progressed, we realized that Ryan has a good understanding of both PCB and programming, so our team assigned Ryan as our leader. The pieces of the project were tackled both as a group and individually. The programming codes would be written by Tamir, and he would bring the code to Ben and Ryan for testing, and from there we would debug the code altogether. The PCB soldering was tackled together, and small components were soldered by either Ryan or Ben when we had time to come in.

Agenda

Goals for our project were set based on the progress we made and how much time was remaining in the semester. when issues came up with the project. Our team continuously worked on the issue to fix it, and when it did not resolve at the end, we decided to look for resorts to them. For example, we decided to resort to a breakout board for an IMU if PCB is not functioning.

Team Issues

One problem we ran into was during exam weeks. All team members could not come in together to work on the project, so we made sure that at least two people met together to work on the project. This resolution was made based on the "Agenda" rules in the team contract we proposed. To improve our team experience, we believe we could have made a schedule for the week of when members were available or not in advance to set a rigid time to meet.