Capstone Progress Report

NAIT

To: Walter Kalin, CNT Instructor, Capstone Mentor

Kelly, Capstone English Instructor

From: Jonathan Fried, CNT Student

Date: Due Friday Feb. 13

Subject: Progress of GPS Speedometer project

**Introduction**

As per our project proposal, I am submitting this progress report to discuss challenges and successes that Logan Bittner and I have had while building our GPS Speedometer.

**Summary of Deliverables**

We are currently on target to complete our proposed project by the deadline of April 12, 2015. Our proposal stated that the following components completed by now:

* Write and submit project proposal

(Completed by Logan Bittner and Jonathan Fried)

* Discuss project with assigned mentor

(Completed by Logan Bittner and Jonathan Fried)

* Have the LCD display fully functional

(Completed by Logan Bittner and Jonathan Fried)

* Have GPS module set up and ready to parse data to LCD

(Completed by Logan Bittner and Jonathan Fried)

**Status of Deliverables**

Write and submit project proposal - Logan and I were able to complete this in approximately 2 days. using resources given to us by Kelly and examples made available to us, we found this task to be fairly simple. This proposal document has already been marked and returned to us.

Discuss project with assigned mentor – This task was originally supposed to be completed by January 16, however, our mentor was not assigned to us until February 5. Even though this was a critical task at the beginning, not completing this early on did not slow us down at all.

Have the LCD display fully functional – This is the first task that we completed following the proposal and the acquisition of our parts. As the display is crucial to our ability to test and debug our product, we decided that this must be our first task to complete. Logan handled soldering the LCD display the Arduino and wiring the appropriate pins. A few issues arose with deciding what pins to use, but by scarfing a few PWM pins and making a change to our LEDs we were able to easily overcome that issue. I did most of the coding for the LCD display. I ran into a few issues while learning how to use the LCD libraries for the Arduino, but that issue was quickly resolved with some research.

Have GPS module set up and ready to parse data to LCD – This is the second critical task that we completed. Without the GPS module, our product does not work. Logan again did the soldering of the GPS to the Arduino, as well as wiring it to the appropriate pins. After the wiring was done, I learnt how to use the GPS libraries to parse the string sent by the GPS on the Arduino, and send desired data to the LCD screen. A major issue that we have currently is the GPS is not very accurate, so in the coming weeks we need to figure out how to improve the accuracy.

As we are slightly ahead of time, we were able to set up our LEDs as well. We decided to use an LED ring instead of the four individual LEDs because the ring only requires one PWM pin, instead of one for each LED. This is crucial as it allowed us more freedom with both the LEDs and the LCD display.

**Deliverables to be completed**

The following tasks still need to be completed. Since we are ahead of schedule, we should easily be able to complete these tasks on time.

* Have LEDs display the direction you are facing
* Improve accuracy of GPS data
* Design and print 3D case for the unit
* Complete required reports

**Changes to scope**

Currently we have no changes to the scope of our product, although we have discussed additional features we might add if we have the time.

**Conclusion**

Logan and I have worked well as a team so far. With me focusing more on the software portion of the project, and Logan focusing more on the hardware portion, we are able to complete tasks quickly and efficiently. I feel confident that we will be able to complete this project by the proposed date. If you have any questions, feel free to contact me at capstonelj@gmail.com.