EE / CprE / SE 492 - Team #15
Portable DAQ for Dogs
Bi-weekly Status Report #3
Client: Simon Lalflamme
Faculty Advisor: Nathan Neihart

Team Members:
Yan Jie Hui - Co-Team Lead
Rohan Yadlapati - Co-Team Lead
Daeyoo Kim - Hardware Lead
Rishab Kinnerkar - Web Developer
Matthew Faronbi - Communications Lead

Past Week Accomplishments

Yan:
Arduino code:
- Updated code to take average of 10 measurements and print in the SD card.

Sensor measurement:
- Use wheatstone bridge to get more accurate measurement from sensor.
- Implement amplifier to increase resolution reading by Arduino.
- Design low pass filter to read DC signal from sensor.

Power Management System:
- Helped redesign system to incorporate the new type of battery.
- Decided to add Boost converter and BMS.

Matthew:
- Researched various designs to implement power management
- Researched the different types and sizes of lithium ion batteries

Rishab Kinnerkar
Website Design:
- Tested different website designs to see the website response for each individual design. Tested 7 designs in total.
- Debugged the website for problems which the graphing software was giving. Modified configuration of website settings for the web-application to run smoothly.
- Researched device portability of the web application so that it could work on other devices like mobile and tablet.
- Tested interaction with different user roles.
- Researched on file reader algorithm

Rohan:
- Worked on low-pass filter code to limit noise from strain sensor
- Implementation of RTC
    - Began working on program to initialize RTC
    - Researched possible RTC IC to be implemented
- Researched new strain gauge sensor to possibly work as replacement/test sensor provided by client
- PIRM presentation

Daeyoo Kim
- Power Management
  - Worked on boost converter which boosts 3.7V (Lithium Ion Battery) to 5V (Arduino).
  - Built a functional circuit of the boost converter, but still not sure if it works properly on the real circuit board.
  - Calculated power efficiency and accuracy.
- PCB
  - Planning to build a circuit when we get the parts that we ordered.
  - Still working with Eagle CAD.

Pending Issues

- Design PBC
- Finish and implement power and battery management design
- Finish signal conditioning board
- Finish Arduino Code
- RTC design decision and implementation
- Micro SD Card

Individual Contributions

Team Members	Contribution	Weekly Hours	Total Hours
Yan Jie Hui	Update Arduino code.Find a better way to measure resistor. Work on Battery Management System. Ordered new parts	16	35
Rohan Yadlapati	PIRM presentation. Test code for low-pass filter. Began research and implementation of RTC.	15	34
Daeyoo Kim	Built a functional circuit of the boost converter, calculated efficiency, and worked on Eagle CAD.	14	32

Rishab Kinnerkar	Tested new website UI's for our project. Debugged issues which the website was giving.	12	30
Matthew Faronbi	Continued research on Power Management systems	11	27

Plans for Coming Week

Rohan:
- RTC implementation ideas
    - Program to determine current time and date from CPU
    - RTC module with seperate power supply

Yan:
- Come up with final design for signal conditioning board(wheatstone bridge + filter + amplifier)

Matt:
- Finalize and test power management system design

Rishab:
- Implement file reader algorithm for the web application.
- Finalize a UI and run performance tests along with debugging.
- Test the different features of the web-application.

Daeyoo:
- Test the functional circuit when i get the part we ordered (Boost converter).
- Calculate how long the battery will long last with the boost converter.
- Research about 555 timer which can control the running time on the circuit.