Week 8 Group Report

Accessible Home Vital Signs Monitoring System

Client Contact: Dr. John Enderle ● University of Connecticut, Bronwell Building, Room 217C, 260 Glenbrook Road, Storrs, Connecticut 06269-2247 ● Voice: (860) 486-5521 ● FAX: (860) 486-2500 ● Email: jenderle@bme.uconn.edu
Week 8 Accomplishments

- Rob worked on sending data from the microprocessor to the LCD screen
- Mike found us a lithium ion battery and charger to power our monitor
- Jenna tried to test the scale at the gym, helped Rob with the LCD screen, and found where to take the signal from the pulse oximeter
Problems with LCD screen

- Initialization code doesn’t seem to be working
- We don’t know why – Crystalfontz tech support says the code is ok, Dave Price’s code is correct and also doesn’t work
- Once this problem is fixed, we should be able to send a string of characters to the LCD screen
Rob began looking into the code we will need to run the module.

This simple code sends each character to the module and then tells it how to speak the string:

```c
void speech(char c)
{
    int cnum;
    cnum=c;
    printf("%c", cnum);
    DelayMs(1);
}

void Writespeech(const char* s)
{
    while(*s)
        speech(*s++);
```
Jenna and Mike brought the scale to the gym to use the free weights to determine a linear voltage vs. weight curve.

This didn’t work because the voltage received out from the scale never changed from .1V.

Jenna then cut the LCD connection inside the scale to open it up completely and get better access to the load cells.
Scale Cont.

- Exposed PCB
- We’ll try to process the signal from the load cells ourselves (amplify it and combine the signal from each cell) then attempt to get a linear weight – voltage relationship
Pulse Oximeter

- Jenna mapped the 5 connection points that led from the LED/photodiode
- Points 1 and 5 are connected to the battery and provide voltage
- Points 2 and 3 are connected across the photodiode
Signal Grabbed from Pulse Oximeter
Pulse Oximeter Calibration

- Cannot calibrate
- Instead we’ll set a threshold voltage, above which the monitor will report a normal SpO2 level (~98%)
- Threshold voltage will most likely be set around 200mV
More Parts Ordered

- Second scale (express ship)
  - There might be some problems because the model of the scale we currently have (SC-200) is out of production, so we had to order the newer SC-202

- Bluetooth development kit (express ship)
Future Work

- Rob: Get the LCD screen to display, incorporate Bluetooth module
- Mike: Order battery, charger, and voltage regulators
- Jenna: Add comparator circuit to pulse oximeter, finish thermocouple probe, work on blood pressure device, incorporate Bluetooth module
Hours Worked

- Rob: 18 hours
- Mike: 11 hours
- Jenna: 15 hours

- Budget spent to date: $755.95 (before Bluetooth and second scale)