Using Technology to Measure Adherence of Complicated Medication Regimens

Progress Report 4

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Problem Statement
According to a recent study, almost 75% of patients, especially the elderly, do not adhere to their medication regimens for various reasons. This lack of adherence can prevent a patient’s recovery. Additionally, the present state of affairs is such that if a patient reports no improvement, a physician does not definitively know whether to try a different medication or whether the patient is simply not taking the medication regularly. To improve general health of patients assigned complicated medication regimens, we are to make a device that keeps a record of when a patient takes their medication.

Project Schedule/Important Dates
March 9th  Midsemester Presentation
May 4th  Poster Presentation
May 9th  Final Papers Due

Summary of Team Accomplishments
• Ordered and received compatible microcontroller (PIC18F4550)
• Received USB to Serial (TTL) converter ((DLP-USB232M)
• Received watch chip (DS1307)

Current Difficulties
• PIC18F4685 was not compatible with the hardware programmer, thus we have to order another microcontroller. We were told that the PIC18F4550 will be compatible with the hardware programmer, thus we will be able to install a bootloader.
### Activities

**Sujan**
- Class Meeting: 2 hrs
- Communications: 0.5 hr
- Notebook: 0.25 hr

**Total:** 2.75 hrs

**Cara**
- Class Meeting: 2 hrs
- BSAC: 0.75 hr
- Research: 0.75 hr

**Total:** 3.5 hrs

**Farshad**
- Class Meeting: 2 hrs
- Discussion with previous dose compliance group: 0.25 hr
- Website updates and notebook update: 0.25 hr

**Total:** 2.5 hrs

**Nipun**
- Class Meeting: 2 hrs
- Online purchases: 0.5 hr
- Meeting with David Markovitch: 1.25 hr
- Progress report: 0.25 hr

**Total:** 4 hrs

**Team Total Hours for this Week:** 12.75 hrs  
**Cumulative Team Hours this semester:** 51.25 hrs  
**Cumulative Team Hours to Date:** 497 hrs

### Expenses

- Microcontroller (PIC18F4685-I/P-ND): $27.44
- Watch chip (DS1307): $17.58
- USB to serial (TTL) interface (DLP-USB232M): $31.47
- Plexiglas: $0.21
- Microcontroller (PIC18F4550): $30.50

**Total:** $112.20