Using Technology to Measure Adherence of Complicated Medication Regimens

Progress Report 10

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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
- Finished mid semester presentations
- Created computer interface
- Found prospective solutions for wiring all the switching
- Found a way to access time from the watch chip
- Found a way to get the microcontroller to sleep, and wake up from sleep using interrupts
- Were able to store time of when a button was pushed
- Completed outreach requirement
- Researched methods to wire the pill box to the circuit
- Researched methods to use the visual basic to interact with the microcontroller
### Current Difficulties

- Once again the bootloader needed to be reinstalled. However, this David Markovitch found that there was an error in our bootloader, and was able to repair the fault.

### Activities

<table>
<thead>
<tr>
<th>Name</th>
<th>Activity</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>Sujan</strong></td>
<td>Communications</td>
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<td></td>
<td><strong>Total</strong></td>
<td><strong>0.5 hrs</strong></td>
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<tr>
<td><strong>Cara</strong></td>
<td>Pill Box measurements</td>
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<td></td>
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<td><strong>1 hr</strong></td>
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<tr>
<td><strong>Farshad</strong></td>
<td>Shopping</td>
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<td><strong>Nipun</strong></td>
<td>Visual Basic Research</td>
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<td>Progress report</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
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**Team Total Hours for this Week:** 8.75 hrs
**Cumulative Team Hours this semester:** 183.5 hrs
**Cumulative Team Hours to Date:** 628.75 hrs

### Expenses

- Microcontroller (PIC18F4685-I/P-ND) $027.44
- Watch chip (DS1307) $017.58
- USB to serial (TTL) interface (DLP-USB232M) $031.47
- Plexiglas $004.21
- Microcontroller (PIC18F4550) $030.50
- Pill box $004.16

**Total:** $116.36