Using Technology to Measure Adherence of Complicated Medication Regimens

Progress Report 14

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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
•  Poster Presentation is complete
•  Final paper is complete

Current Difficulties
•  The switch matrix still needs some troubleshooting. The possible sources of error are in the ribbon cables, the soldering of the switches and the design of the printed circuit board.
### Activities

**Sujan**
- Construction: 6 hrs
- Final Paper: 3 hrs
- Notebook: 0.5 hr
- Poster Presentation: 3.5 hrs

**Total:** 13 hrs

**Cara**
- Construction: 9 hrs
- Poster Presentation: 3.5 hrs
- Final Paper: 11 hrs

**Total:** 23.5 hrs

**Farshad**
- Circuit: 11 hrs
- Report: 6 hrs
- Notebook: 6 hrs
- Notebook Update: 0.5 hrs
- Peer Evaluation: 1 hr
- Poster Presentation: 3.5 hrs

**Total:** 28 hrs

**Nipun**
- Programming: 9 hrs
- Meeting with David: 1 hr
- Poster Presentation: 3.5 hrs
- Final Paper: 8 hrs
- Notebook: 2 hrs
- Peer Evaluations: 1 hr
- Progress report: 0.25 hr

**Total:** 24.75 hrs

**Team Total Hours for this Week:** 89.25 hrs

**Cumulative Team Hours this semester:** 358.75 hrs

**Cumulative Team Hours to Date:** 804 hrs

### Expenses

- Microcontroller (PIC18F4685-I/P-ND): $27.44
- Watch chip (DS1307): $17.58
- USB to serial (TTL) interface (DLP-USB232M): $31.47
- Plexiglas: $0.42
- Microcontroller (PIC18F4550): $30.50
- Pill box: $0.16
- Wires: $0.32
- Piezo Electric Buzzers: $0.95
- Diodes and Ribbon Cables: $18.50
- Wire: $0.32
- Construction supplies: $38.35
- Switches: $27.12
- Printed circuit board: $125.90

**Total:** $346.92
* Dr Jeurgens has made the payment for these components directly.