Using Technology to Measure Adherence of Complicated Medication Regimens

Progress Report 10

Client
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Team Members
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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.

Summary of Team Accomplishments
- Formed team and assigned individual roles
- Met with client and obtained project supplies
- Formulated problem statement
- Brainstormed possible designs
- Compile team members’ parts of the PDS and edit
- Create project website
- Meet with Professor Morrow to discuss possible solutions
- Research processors
- Obtained a microcontroller and corresponding development kit
- Narrowing down designs and design specifics
- Figured out concept of a switch matrix
- Work on mid-semester presentation
- Research specifics about a switch matrix
- Research various switches that could be used
- Ordered switches/buttons
- Figured out how to use pins P3, P4, P5 and P6
- Purchased several pill boxes.

**Current Week’s Goals**

- Research
- Build and test a sample circuit with the micro controller
- Overcome microcontroller problems
- Integrate switches and circuit into a pill box

**Project Schedule / Important Dates**

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Current Difficulties
- How to use pins P1.1 – P1.7, P2.1 – 2.7, P3.1 – P3.7, P4.1 – P4.7, P5.1– P5.7, P6.1 – P6.7 on the microcontroller
  - Currently we can only pins P1.0, P2.0, P3.0, P4.0, P5.0, P6.0
- How to use the in built clock on the microcontroller

Activities
Sujan
Group Meeting 3 hrs
Research 1 hr
Shopping 1.5 hr
Total: 5.5 hrs

Cara
Team Meeting 3 hrs
Co-worker Meeting 0.5 hr
Research 1 hr
Shopping 1.5 hrs
Total: 6 hrs

Farshad
Group Meeting 3 hrs
Shopping 1.5 hrs
Research 3 hrs
Switch Purchasing 1 hr
Total: 8.5 hrs

Nipun
Group Meeting 3 hrs
Shopping 1.5 hrs
Microcontroller 4 hrs
Research 0.5 hrs
Progress report 0.25 hr
Total: 9.25 hrs

Team Total Hours for this Week: 29.25 hrs
Cumulative Team Hours to Date: 184.75 hrs

Expenses:
- 2 Pill Boxes $2.11
- 4 Pill Boxes $9.90