MEDSense: An Accessible Pill Cap Dispensing/Cutting Device

Week 8 (03/14/08-03/21/08) Report

Team Members:
- Ashley Martin
- Timothy Coons
- Christopher Falkner
- Ryan Pogemiller
Project Overview

- Side View with Bottle Upright
- Internal View of Cap During Operation
Work Completed - Mechanical Arrangement

- Accurate size to model actual parts
- Parts were put together as an assembly
- Make sure enough space will be available for electronic components
Work Completed- Mechanical

- Adhered razor and springs to the backing
- Below is a depiction of how these two pieces will fit together
Work Completed - Motors

- Tested motors
- Finished code to control cutting motor and disc motor
- Programmed microcontroller to control movement of motors

Motor controlled by PIC microcontroller
Work Completed - Offsite Alert

- Bluetooth
  - Programmed microcontroller with simple UART program
  - Achieved wireless interaction between PC and PIC
  - Wrote code to send commands to module via microcontroller

In-circuit programming of PIC to interact with Bluetooth module
Work Completed - Pill Detection

- Analog-to-Digital Conversion
  - Wrote code for analog-to-digital conversion
  - Finished pill holding chamber with detector and emitter
## Timeline

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Resource Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Part to hold cutting motor to enclosure</td>
<td>4 days</td>
<td>Fri 3/21/08</td>
<td>Wed 3/26/08</td>
<td>Tim</td>
</tr>
<tr>
<td>Machine Chute for Dispensing Pills</td>
<td>4 days</td>
<td>Fri 3/28/08</td>
<td>Wed 4/2/08</td>
<td>Tim and Ashley</td>
</tr>
<tr>
<td>Force Analysis of Motor</td>
<td>2 days</td>
<td>Mon 3/24/08</td>
<td>Tue 3/25/08</td>
<td>Ashley</td>
</tr>
<tr>
<td>Test Compatibility of Components</td>
<td>2 days</td>
<td>Thu 4/3/08</td>
<td>Fri 4/4/08</td>
<td>Tim and Ashley</td>
</tr>
<tr>
<td>Finish Bluetooth Programming</td>
<td>2 days</td>
<td>Fri 3/21/08</td>
<td>Mon 3/24/08</td>
<td>Ryan and Chris</td>
</tr>
<tr>
<td>Test Motor Cutting Pill</td>
<td>1 day</td>
<td>Mon 3/24/08</td>
<td>Mon 3/24/08</td>
<td>Tim and Ashley</td>
</tr>
<tr>
<td>Program Text-to-Speech Module</td>
<td>5 days</td>
<td>Mon 3/24/08</td>
<td>Fri 3/28/08</td>
<td>Ryan and Chris</td>
</tr>
<tr>
<td>Program RTC</td>
<td>5 days</td>
<td>Mon 3/24/08</td>
<td>Fri 3/28/08</td>
<td>Ryan and Chris</td>
</tr>
<tr>
<td>Alarm System</td>
<td>14 days</td>
<td>Fri 3/28/08</td>
<td>Wed 4/16/08</td>
<td>Ryan and Chris</td>
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</tbody>
</table>
Hours Worked

- Ashley - 8
- Tim - 10
- Chris - 12
- Ryan - 18