MEDSense: An Accessible Pill Cap Dispensing/Cutting Device

Week 6 (02/22/08-02/29/08) Report
Team Members:
Ashley Martin
Ryan Pogemiller
Tim Coons
Chris Falkner
Project Overview

External View

Internal View

Medication

Push Button

Cutting / Dispensing / Notification / Alert Area

Linear Actuator Motor to Cut Pill
Hole to Disperse Pill
Rotating Axis
Rotating Motor

Medication Bottle
Supports for Pills
Turning discs to act as covers and supports
Pill Chute
Pill Exit

Batteries and Electronics
Work Completed - Mechanical

- Acquired PVC cylinder for cap
- Cylinder contains two compartments: top part for mechanical, bottom for electrical components
Work Completed - Mechanical

- Machined T-Knot for backing of razorblade
- T-Knot slides in blade track and is moved by servo motor
Work Completed – Servo Motors

- Circuit for multiple servo motors
Work Completed - Text-To-Speech

- Connected serially
- Tested capabilities
- Preliminary programming – ASCII table
Work Completed - Electronics

- I²C bus connection from PIC to Real time clock and text-to-speech module
Work Completed – Vibrating Motor

- Varied vibrating motor sources
Future Work

- Optimize motor control
- Finish programming RTC and Text-to-speech module
- Write code for PIC interaction with Bluetooth (C++)
- Design layout of pill cap
<table>
<thead>
<tr>
<th></th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
<th>Resource Names</th>
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<tbody>
<tr>
<td>1</td>
<td>Machine top and bottom of pill cap</td>
<td>1 day?</td>
<td>Thu 2/28/08</td>
<td>Thu 2/28/08</td>
<td></td>
<td>Tim and Ashley</td>
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<td>2</td>
<td>test servo motors</td>
<td>1 day?</td>
<td>Thu 2/28/08</td>
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<td>Ashley</td>
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<td>3</td>
<td>programming RTC</td>
<td>7 days</td>
<td>Thu 2/28/08</td>
<td>Fri 3/7/08</td>
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<td>programming test-to-speech</td>
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<td>Tue 3/18/08</td>
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<td>finish turing disks</td>
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<td>design PCB board</td>
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<td>Alarm system</td>
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<td>Thu 2/28/08</td>
<td>Fri 3/7/08</td>
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</table>
Hours Worked

- Ashley - 12
- Tim - 11
- Christopher - 15
- Ryan - 14