Backpack Lever Arm System
&
Shampoo/Conditioner Identification Device
Week 4 Report

Team 4:
Lu Ma
Nahum Kryzman
Raj Shah
Backpack Lever Arm System
Work Completed

- **Microcontroller:**
  - Changed PIC from PIC16F84A to PIC16F877
  - Made ICD circuit
  - Tested the program
  - Obtained PWM output from CCP module
  - Ordered the PIC16F877

- **270 degrees hinges:**

- **7 Hole Tee Joining Plate:**
  - Attach the vertical pieces to Segment 1
Future Work

- Check on the Servo Motors.
- Continue to program the Microcontroller to control the Servo Motors.
- Finalized the hinges.
Shampoo-Conditioner Identification System
Work Completed

• Amplification Circuit:

• 4 resistors
• 5 capacitors
• 1 potentiometer
• 1 amplifier
Work Completed

- Size: 3” X 1.7”
- Compare to the Digilent Speaker Board:
  - 2.65” X 1.75”
  - 0.25” longer
Work Completed

- Batteries:
  - 4 AAA batteries needed
  - Battery Holders:

- Attachment to the bottle:
  - The back of the iPod Case
Future Work

- Confirm and order the PCB
- Attach the battery holder to the back of the iPod case
- Insulation
- Attach the buttons
<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
<th>Resource Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order Speakers</td>
<td>1 hr</td>
<td>Tue 2/19/08</td>
<td>Tue 2/19/08</td>
<td></td>
<td>Lu</td>
</tr>
<tr>
<td>Order the PCB circuit</td>
<td>1 hr</td>
<td>Tue 2/19/08</td>
<td>Tue 2/19/08</td>
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<td>Lu</td>
</tr>
<tr>
<td>Order 7 hole Tee Jointing plate</td>
<td>1 hr</td>
<td>Tue 2/19/08</td>
<td>Tue 2/19/08</td>
<td></td>
<td>Lu</td>
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<tr>
<td>Build the shampoo amplification circuit</td>
<td>5 days</td>
<td>Fri 2/29/08</td>
<td>Thu 3/6/08</td>
<td>Lu &amp; Numik</td>
<td></td>
</tr>
<tr>
<td>Attach the push button to the shampoo circuit</td>
<td>1 day</td>
<td>Mon 3/3/08</td>
<td>Mon 3/3/08</td>
<td></td>
<td>Lu &amp; Numik</td>
</tr>
<tr>
<td>Fit the circuit into the iPod case</td>
<td>1 day</td>
<td>Wed 3/5/08</td>
<td>Wed 3/5/08</td>
<td></td>
<td>Lu</td>
</tr>
<tr>
<td>Insulate the circuit</td>
<td>5 days</td>
<td>Thu 3/6/08</td>
<td>Wed 3/12/08</td>
<td></td>
<td>Raj</td>
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<tr>
<td>Connect 3 segments of the Lever Arm</td>
<td>1 day</td>
<td>Thu 2/21/08</td>
<td>Thu 2/21/08</td>
<td></td>
<td>Lu &amp; Raj</td>
</tr>
<tr>
<td>Connect the two vertical pieces to Segment 1</td>
<td>1 day</td>
<td>Fri 2/22/08</td>
<td>Fri 2/22/08</td>
<td></td>
<td>Lu &amp; Raj</td>
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<tr>
<td>Attach the clipper onto Segment 3</td>
<td>0.5 days</td>
<td>Mon 2/25/08</td>
<td>Mon 2/25/08</td>
<td></td>
<td>Lu &amp; Raj</td>
</tr>
<tr>
<td>Program the PIC</td>
<td>29 days</td>
<td>Tue 2/19/08</td>
<td>Fri 3/28/08</td>
<td></td>
<td>Raj &amp; Numik</td>
</tr>
<tr>
<td>Mount the motors onto the Lever Arm</td>
<td>2 days</td>
<td>Mon 3/31/08</td>
<td>Tue 4/1/08</td>
<td></td>
<td>Raj &amp; Numik</td>
</tr>
</tbody>
</table>
Hours Worked

- Raj: 18
- Lu: 14
- Numik: 12
QUESTIONS??