Backpack Lever Arm System & Shampoo/Conditioner Identification Device

Week 8 Report

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

- Made new hinges in Machine Shop (3 different designs)
- Final Design: strong enough, rotates 270 degrees
Work Completed

• Design #1:
  • Made out of Aluminum
  • Three points of attachments
• Tested with a bag pack:
  • Aluminum is strong enough
  • Attachments aren’t strong enough
Work Completed

• Design #2:
  • Made out of thin aluminum
  • L-shape, rotate 270 degrees

• Tested results:
  • Improvement from previous design
  • Material is not strong enough
Work Completed

• Made the PCB circuit: 2.5” by 2.7”
Future Work

• Continue to program the Microcontroller to control the Servo Motors.
• Continue testing the hinges
• Insulation material
Shampoo-Conditioner Identification System
Work Completed

- Started building the amplification circuit
  - Surface mount adapter for the LM4876 is not compatible, ordered new ones
  - Speakers aren’t loud enough

- Looked into insulation
  - Plastic boxes
Future Work

• Finishing building the amplification circuit on the protoboard
• Order PCB
• Insulation
# Timeline

<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>Lu</td>
<td></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>
<td>Lu</td>
<td></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>Lu</td>
<td></td>
</tr>
<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</td>
<td>1 day</td>
<td>Mon 3/3/08</td>
<td>Mon 3/3/08</td>
<td>Lu &amp; Numik</td>
<td></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>Lu</td>
<td></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>Lu &amp; Raj</td>
<td></td>
</tr>
<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>Lu &amp; Raj</td>
<td></td>
</tr>
<tr>
<td>Connect the two vertical pieces to</td>
<td>1 day</td>
<td>Fri 2/22/08</td>
<td>Fri 2/22/08</td>
<td>Lu &amp; Raj</td>
<td></td>
</tr>
<tr>
<td>Segment 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attatch the clipper onto Segment 3</td>
<td>0.5 days</td>
<td>Mon 2/25/08</td>
<td>Mon 2/25/08</td>
<td>Lu &amp; Raj</td>
<td></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>Raj &amp; Numik</td>
<td></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>Raj &amp; Numik</td>
<td></td>
</tr>
</tbody>
</table>

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### Gantt Chart

Day of the Week:
- S: Sunday
- M: Monday
- T: Tuesday
- W: Wednesday
- T: Thursday
- F: Friday
- S: Saturday

- **Lu**: Lu
- **Lu & Numik**: Lu & Numik
- **Lu & Raj**: Lu & Raj
- **Raj**: Raj
- **Lu & Raj**: Lu & Raj
- **Lu & Ilumik**: Lu & Ilumik
- **Raj & Ilumik**: Raj & Ilumik

The Gantt chart visually represents the timeline and resource allocation for each task, showing the progression and dependencies between them.
Hours Worked

- Raj: 16
- Lu: 13
- Numik: 13