E-Racer

Kevin Arpin, Michael Marquis, Allison Meisner, Travis Ward

Client Contact: Gregg and Laura McClement, Calgary, AB, Canada
E-Racer as of Week 7
Work Completed - Summary

- Working to fix all bugs in control system
- Found new solution for hand controls
- Finished mounting vehicle seat
- Modified steering control box
Work Completed - Kevin

- Mainly focused on fixing bugs
- Worked on acceleration system—currently working correctly
- Worked on braking system—currently having some problems
- Braking system is interfaced to actuator
Work Completed - Michael

- Researched and ordered control mechanism for hand accel/braking—rocker switch
- Ordered switch for mode select
- Assisted Travis in finding a supplier of linear potentiometers
- Working to design system for tracking position of steering rack
Work Completed - Allison

- Purchased and installed hardware to secure back of seat
- Finished attaching seat to vehicle frame
- Designed plate for mounting braking linear actuator
- Designed curved bracket for securing braking linear actuator
Work Completed - Travis

- Drilled holes and mounted items in steering control box
- Took apart hand brakes and all wiring up to steering wheel
- Researched and looked for linear potentiometers and got quotes
- Worked with rotary potentiometers to measure linear actuator extension
Future Work

- **Kevin**
  - Fix bug in braking
  - Build steering pic
  - Write code
  - Test steering control system
  - Test overall control system

- **Michael**
  - Assist Travis with design and fabrication of steering potentiometer
  - Mount steering linear actuator
  - Mount and wire control switches on steering wheel
  - Assist Allison with fabrication and installation of braking modifications
Future Work

- **Allison**
  - Fabricate cable joiner, mounting plate, and shaft bracket
  - Attach braking linear actuator and pulley to mounting plate
  - Fabricate armrest
  - Install joystick and armrest in vehicle

- **Travis**
  - Have steering control box completely finished
  - Order 12V battery to use for testing on go-kart
  - Begin installing rotary potentiometer for steering system
## Schedule

<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>1 Fix bug in braking</td>
<td>4 days</td>
<td>Wed 3/18/08</td>
<td>Mon 3/24/08</td>
<td>Kevin</td>
</tr>
<tr>
<td>2 Build steering plc</td>
<td>3 days</td>
<td>Mon 3/24/08</td>
<td>Wed 3/26/08</td>
<td>Kevin</td>
</tr>
<tr>
<td>3 Write code</td>
<td>6 days</td>
<td>Wed 3/26/08</td>
<td>Wed 4/2/08</td>
<td>Kevin</td>
</tr>
<tr>
<td>4 Test steering system</td>
<td>2 days</td>
<td>Thu 3/27/08</td>
<td>Fri 3/28/08</td>
<td>Kevin</td>
</tr>
<tr>
<td>5 Test overall control system</td>
<td>5 days</td>
<td>Mon 3/31/08</td>
<td>Fri 4/4/08</td>
<td>Kevin</td>
</tr>
<tr>
<td>6 Design and fabricate steering potentiometer</td>
<td>4 days</td>
<td>Mon 3/31/08</td>
<td>Thu 3/27/08</td>
<td>Travis and Michael</td>
</tr>
<tr>
<td>7 Mount steering linear actuator</td>
<td>3 days</td>
<td>Mon 3/31/08</td>
<td>Wed 4/2/08</td>
<td>Michael</td>
</tr>
<tr>
<td>8 Mount and wire control system switches</td>
<td>2 days</td>
<td>Tue 3/25/08</td>
<td>Wed 3/26/08</td>
<td>Michael</td>
</tr>
<tr>
<td>9 Fabricate and install braking system modification</td>
<td>2 days</td>
<td>Mon 3/24/08</td>
<td>Tue 3/25/08</td>
<td>Allison and Michael</td>
</tr>
<tr>
<td>10 Fabricate brake joint, mounting plate, and shaft</td>
<td>4 days</td>
<td>Wed 3/15/08</td>
<td>Mon 3/24/08</td>
<td>Allison</td>
</tr>
<tr>
<td>11 Attach braking L and pulley to mounting plate</td>
<td>3 days</td>
<td>Tue 3/25/08</td>
<td>Thu 3/27/08</td>
<td>Allison</td>
</tr>
<tr>
<td>12 Fabricate armrest</td>
<td>3 days</td>
<td>Wed 4/2/08</td>
<td>Fri 4/4/08</td>
<td>Allison</td>
</tr>
<tr>
<td>13 Install joystick and armrest in vehicle</td>
<td>4 days</td>
<td>Thu 4/3/08</td>
<td>Fri 4/8/08</td>
<td>Allison</td>
</tr>
<tr>
<td>14 Complete steering control box</td>
<td>3 days</td>
<td>Wed 3/18/08</td>
<td>Fri 3/21/08</td>
<td>Travis</td>
</tr>
<tr>
<td>15 Order 12V battery</td>
<td>1 day</td>
<td>Thu 3/20/08</td>
<td>Thu 3/20/08</td>
<td>Travis</td>
</tr>
</tbody>
</table>

Remaining budget: $500
Hours Worked

- Kevin: 22 hours
- Michael: 12 hours
- Allison: 14 hours
- Travis: 18 hours
Questions, Comments, Concerns?