Progress Report: Week of 11-18/25-2005

Robotic Arm for Minimally Invasive Surgery
Team 22

Client: Aimen F. Shaaban, M.D.
Assistant Professor of Surgery
University of Wisconsin Medical School

Team Members: Ashley Huth (BSAC)
Brenton Nelson (Leader)
Max Michalski (Communicator)
Sujan Bhasheetharan (BWIG)

Problem Statement: Our client desires a more efficient surgical instrument for minimally invasive surgery. The instrument must be operable by hand and optimally will mimic the motions of the human wrist. Improvements of various factors for convenience are necessary and include, but are not limited to: applied force feedback, reusability, and simple operation for new users.

Last Week’s Goals:
- Begin planning for the final report.
- Keep building prototype.

Accomplishments:
- Built prototype
- Made poster for the poster presentation
- Practiced presentation
- Budgeted for prototype

Next Week’s Goals:
- Hand in final paper
- Meet with advisor

Difficulties:
All seem to be solved.

Team Activities:
11-18-05: Class time
Time: 1 hr
11-27-05: Met to build prototype and design poster
Time: 2 hr

Project Timeline:
<table>
<thead>
<tr>
<th>Week</th>
<th>Reporting Period Beginning</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>September 8</td>
<td>Received Project and Teams, Assigned Team Positions, 1 Meeting with our client (Dr. Shaaban)</td>
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<tr>
<td>2</td>
<td>September 15</td>
<td>Wrote PDS, Max assembled possible prototype, Contacted Professor Kreg Gruben</td>
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<td>3</td>
<td>September 22</td>
<td>Brain storm prototypes, and continue research on current surgical devices</td>
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<td>4</td>
<td>September 29</td>
<td>Work on written report, 3 prototype designs</td>
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<tr>
<td>5</td>
<td>October 6</td>
<td>Work on written report, 3 prototype designs</td>
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<td>6</td>
<td>October 13</td>
<td>Finalize 3 alternative design</td>
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<td>7</td>
<td>October 20</td>
<td>Hand in PDS with written report. Submitted notebooks for review, gave oral presentations</td>
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<td>8</td>
<td>October 27</td>
<td>Develop final prototype</td>
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<td>9</td>
<td>November 3</td>
<td>Work on final prototype and poster</td>
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<tr>
<td>10</td>
<td>November 10</td>
<td>Work on final prototype and poster</td>
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<td>11</td>
<td>November 17</td>
<td>Work on final prototype</td>
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<td>12</td>
<td>November 24</td>
<td>Assemble final prototype</td>
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<td>13</td>
<td>December 1</td>
<td>Prepare for presentation</td>
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<td>14</td>
<td>December 8</td>
<td>Hand in final report and notebooks</td>
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<td>15</td>
<td>December 15</td>
<td>Meet with advisor</td>
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Expenses:
Ordering of parts have cost a minimal amount, all backed up by our client.

Design Grid:

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<thead>
<tr>
<th>Task</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
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<tr>
<td></td>
<td>2</td>
<td>9</td>
<td>16</td>
<td>23</td>
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<tr>
<td><strong>Design</strong></td>
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<td>Design brainstorming</td>
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<tr>
<td>Preliminary Designs</td>
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<tr>
<td>Friday Team Meetings</td>
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<td>Solid Works Design</td>
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<td><strong>Deliverables</strong></td>
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<td>Progress Report</td>
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<td>PDS</td>
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<tr>
<td>Mid Semester Paper</td>
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<td>End Semester Presentation</td>
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**End Semester Paper**

**Meetings**
- Client
- Final Meeting with Advisor

**Prototype**
- Accounting/budgeting
- Final design developments
- Rapid prototyping
- Analysis/testing
- Final prototype manufacturing
- Final testing

**Website**

**BSAC**

Brenton
Max
Ashley
Sujan
All