Group DEC1617 - Miniature Greenhouse for Precision Agriculture

<table>
<thead>
<tr>
<th>Victor Gomez</th>
<th>(Communication Leader)</th>
<th>Esdras Murillo</th>
<th>(Team Leader)</th>
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<tbody>
<tr>
<td>Pat Martin</td>
<td>(Webmaster)</td>
<td>Yufeng Huang</td>
<td>(Key Concept Holder)</td>
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<tr>
<td>Romina Rivadeneira</td>
<td>(Webmaster)</td>
<td>Austin Zehr</td>
<td>(Key Concept Holder)</td>
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<tr>
<td>Advisor: Dr. Liang</td>
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<td>Dong</td>
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**Weekly Summary (Short summary about what you did this week):**
The team has made progress in all aspects of the project this week. The PCB for the water pump system was reviewed and improvements were made. The box was finished and ordered to hold the PCB and water pumps as well. Despite the delay in ordering the parts for the LED system, they arrived quickly and the lighting system was implemented. The two main issues discovered in our testing and after our advisor meeting was the overheating of the lighting system and the design of the growth chamber’s heating/cooling system. These issues will be addressed by the team with the most priority. The overall progress of the project is looking good as things are starting to come together.

**Past week accomplishments (please describe as what was done, by whom, when):**
- Pat and Esdras received feedback on the designed PCB and implemented improvements to the design.
- Victor and Pat have created a working LED lighting system for the growth chamber.
- Multiple heating and cooling system solutions were tested for the growth chamber. Permanent solution not complete, but progress is being made by the team.

**Pending issues:**
- LED strips ordered produce considerable amount of heat. Need to find a way to cool them without compromising the characteristics of the chamber.
- Brass Company representative may have incorrectly set up power supply for track movement on the robotic arm. May need to be sent in for repairs.
- There is some uncertainty in the group as to how the cooling system should be setup for the chamber.
• Individual contributions

Week 9 individual contributions:

<table>
<thead>
<tr>
<th>NAME</th>
<th>Individual Contributions</th>
<th>Hours this week</th>
<th>Hours Cumulative</th>
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<tbody>
<tr>
<td>Esdras</td>
<td>Improved PCB from previous design based on suggested improvements and finished water proof enclosure</td>
<td>10</td>
<td>55</td>
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<tr>
<td>Pat</td>
<td>Worked with Victor and Esdras on PCB, lighting issues.</td>
<td>20</td>
<td>89</td>
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<tr>
<td>Yufeng</td>
<td>Assisted in the creation of the water pump box</td>
<td>6</td>
<td>34</td>
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<tr>
<td>Romina</td>
<td>Worked on the Website and layout for water pump system.</td>
<td>7</td>
<td>38</td>
</tr>
<tr>
<td>Austin</td>
<td>Met with Braas company representative to work on controller for robotic arm.</td>
<td>6</td>
<td>43</td>
</tr>
<tr>
<td>Victor</td>
<td>Developed lighting system and worked on heating system with Pat. Assisted with controller for robotic arm</td>
<td>20</td>
<td>59</td>
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• Plan for coming week (please describe as what, who, when)
  
  o Esdras
    ▪ Put final touches on PCB for water pump system and order more items needed for final design
  
  o Romina
    ▪ Begin planning the programming portion of the water pump system
o Pat
  ▪ Work with Esdras on finishing PCB and continue to brainstorm cooling solutions for the lights and the chamber.

o Yufeng
  ▪ Begin creating a new cover for the new coming cooling device and work on heating/cooling system.

o Victor
  ▪ Work on cooling solution for lighting system.
  ▪ Continue to assist with development of the heating and cooling system

o Austin
  ▪ Continue to work with Xinran to start camera software for the robotic arm.

o Team
  ▪ Continue development of presentation

**Summary of weekly advisor meeting (if applicable/optional)**

In our weekly advisor meeting, the issue with the LED system parts not being ordered was addressed. Parts were promptly ordered following our discussion. The team and advisor began discussing potential ways to setup the heating and cooling system. The advisor is primarily concerned with the cheapest solution to lower the temperature inside of the chamber to 10 degrees Celsius, while enabling proper air circulation. This has been brought up to be the highest priority for the project at this current time.