

# sddec18-22 Automower (Autonomous Lawn Mower)

*Weekly Report #4*

*Reporting Period: 02/21/18 - 02/28/18*

*Client: Micron Technologies/Ryan Marion*

*Advisor: Dr. Jones*

## Team Members

Sam Tinklenberg - Team Leader

Andi Li - Meeting Facilitator/Software Dev

Bryton Hayes - Test Engineer

Grant Duncan - Software Lead

Joel Seaser - Hardware Lead

## Summary of Weekly Report

This week we mainly worked on the development of our design document, the solidification of our bill of materials, and our mobile application. We are still waiting for our parts to arrive so we are making due with test cases when we can. As soon as we get the necessary parts, then progress will increase greatly.

## Previous Week Tasks Completed

General Tasks:

- Calculations for power and load on device
- Further solidified bill of materials

Specific Tasks:

- Add arduino libraries to GIT
  - DC motor control
  - GPS
  - LIDAR
  - Servo motor
- Mobile App
  - Implemented weather API and parsing
  - JSON objects
  - Gathered images for weather conditions and implemented code for setting them according to current weather
  - Started GPS location data
  - Worked on UI improvements

## Tasks In Progress for this Week.

General Tasks:

- Design Document v1.
- Draft arduino code for use with libraries

Specific Tasks:

- Complete bill of materials
- Mobile Application
  - Ui improvements
  - Implement weather API
- Begin writing code for the microcontroller.
  - Implement and test low level features on roomba.
  - Start merging libraries for our lawnmower.
  - Continue testing existing open source libraries.
- Research differential GPS and other GPS capabilities

## Tasks Up for Next Week

### General Tasks:

- Finishing researching and get parts list for invisible wire
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### Specific Tasks:

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- Mobile Application
  - Connect with a dummy device
  - Work on saving data
    - Look into saving with SQLite
    - Fix Saved Preferences format
  - Create settings options
  - Implement GPS location data for use in weather

## Division of Work

Team Member	Contributions	Hours this week	Total Hours
Sam Tinklenberg	Skeleton code, arduino libraries, design document.	5.5	14.5
Andi Li	Design Document, arduino libraries, and got familiar with the mobile application	5.5	15
Bryton Hayes	Merging arduino libraries into project, design document	5	16
Grant Duncan	Implemented weather API and parsing JSON objects,	8	19

	gathered images for weather conditions and implemented code for setting them according to current weather, started GPS location data, worked on UI improvements.		
Joel Seaser	Looked through different motor options. Worked on researching components for belt driven reel blade. Looking into arduino code for controlling motors	5	16

### Summary of Weekly Advisor Meeting

During our last meeting, we went over an outline of features that we intend to include in our final product, as well as some of our calculations pertaining to power and load. Dr. Jones provided a lot of good feedback on our documentation, and challenged us with some good specific questions about the direction of our design.