

sddec18-22 Automower (Autonomous Lawn Mower)

Weekly Report #2

Reporting Period: 02/08/18 - 02/14/18

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 focused on choosing the correct microcontrollers and different technical parts of our mower. Such as the type of motors, wheels, and size. We also started working on writing the code outline and started the mobile application for different modules of our program.

Previous Week Tasks Completed

General Tasks:

- Project Plan v1
 - Completed version 1.
- Design Thinking Workshop
 - Developed a deeper understanding of our user's needs
 - Ideated several plans of action

Specific Tasks:

- Work on design decisions
 - Drive train
 - Researched multiple RC options
 - Researched available kits
 - 3D print vs. Buying rc kit vs. combination of both
 - 3D printing entire project is out of our scope
 - Buying an RC kit will provide a sturdy design basis (waiting on funds)
 - Microcontrollers
 - Image processing possibly out of scope
 - Arduino Mega will be stable and capable enough for initial testing (waiting on funds)
 - Mapping tool
 - Found driver, coils, and wire (waiting on funds)

Tasks In Progress for this Week.

General Tasks:

- Project plan revision 2
- Design thinking workshop reflection

Specific Tasks:

- Code outline
 - Made skeleton code for different functions such as:
 - Movement
 - Feedback loop for straight lines
 - Detecting waves from guide wire
 - Detecting moisture
 - Main for mowing the lawn
 - Mobile Application
 - Created the basic layout of the functions
 - Added buttons for the features that the mower will perform
- Research Arduino libraries
 - Add helpful libraries to git
 - GPS interface library
 - DC motor library

Tasks Up for Next Week

General Tasks:

- Continue coding on the mobile app
- Order the microcontroller and start testing(If the funding arrives)

Specific Tasks:

- Calculate rough battery necessities
- Start implementing AI on a roomba.

Division of Work

Team Member	Contributions	Hours this week	Total Hours
Sam Tinklenberg	Skeleton Code, Project plan, design thinking workshop.	2	5
Andi Li	Started the Mobile App User Interface	2	5
Bryton Hayes	Skeleton Code, Chassis research	2	6
Grant Duncan	Started the Mobile	3	5

	App User Interface		
Joel Seaser	Kit research	2	5

Summary of Weekly Advisor Meeting

We went over our meeting with our client and got feedback from Dr. Jones. We presented our current ideas and he gave us lots of different twists on a few of our ideas. We discussed how to move forward with purchases and how we are still waiting for our client to authorize our funding. Dr. Jones was very helpful with driving us to dig even deeper into our research and possibilities for both the chassis and microcontroller.