EE / CprE / SE 492 - sdmay21-40
Dancing Swarm of Robots
Bi-Weekly Report 1

Jan. 25 - Feb. 7
Client: Dr. Akhilesh Tyagi
Faculty Advisor: Dr. Akhilesh Tyagi, Dr. Diane Rover

Team Members

Abdalla Abdelrahman ─ Meeting Facilitator, Software Engineer
Daniel Nikolic ─ Test Engineer
Benjamin Schneider ─ Report Manager, Hardware Engineer
Noah Thompson ─ Chief Hardware Engineer
Mason Walls ─ Chief Software Engineer
Cole Weitzel ─ Meeting Scribe, Software Engineer

Weekly Summary

During the first two weeks of the semester, our primary focus has been setting up a meeting time that works for most or all of our team members. Due to conflicting schedules, this has proven to be difficult. We now have a working plan with several alternatives to help mitigate these obstacles in the future.

Since we are still unsure of lab accessibility for our hardware implementation, the final scope of the project is still up in the air. A fully simulated implementation was deemed feasible last semester, so this can serve as a possible workaround if our hardware options become limited. To prepare the simulated portion of our project, the prototype robot model from last semester was added to our repository for future expansion and experimentation with a follower algorithm.

Past Week Accomplishments

- Put together a meeting plan for team members and our advisor/client
- Prepared our repository with last semester's successful prototype robot model and controller
- Prepared meeting report templates for the rest of the semester

Pending Issues

- We are still unsure of how our hardware implementation will be completed this semester with lab access restrictions. This issue will be discussed at our first advisor meeting.
- Our follower algorithm is still relatively generalized. A more definite algorithm will be designed through experimentation with our simulated model.

Individual Contributions

Team Member	Contribution	Bi-Weekly Hours	Total Hours
Abdalla	Inquired about lab openings or TLA in Coover. Inquired about the possibility of borrowing Roomba for the semester. Helped in planning weekly team meetings.	1	1
Daniel	Helped in setting up weekly team meetings and seeked information about lab openings in Coover.	1	1
Ben	Set up the master branch of our repo with the prototype robot model from last semester.	1.5	1.5
Noah	Helped plan weekly meetings.	1	1
Mason	Helped in planning weekly team meetings. Inquired about lab openings for work with physical roombas.	1	1
Cole	Set up status reports for the rest of the semester. Created whentomeet.com link for meeting times. Worked on a simulated follower algorithm.	3	3

Plans for Coming Week
- Abdalla
  - For the next week, I plan on working on getting connected with a physical device. Due to restrictions placed upon lab usage, if we are unable to obtain a lab space, I plan on developing more WeBot simulations to perfect the movement system of the iCreate Roombas, and Ben/Cole in developing the follower algorithm. However, if we are able to secure a lab space, I would like to start setting up the environment in which the physical Roombas will be in, as well as connecting to the microcontroller via Java Sockets.
- Daniel
  - I plan to help Abdalla with further work in algorithm development within WeBots. I also plan to finalize our lab plans so that we can begin working on our project in person by the end of this week or early next week.
- Benjamin
  - Work on simulated geometry models for two additional participants
- Noah
  - Assist Mason with object/collision detection simulation in WeBots
- Mason
  - Implement the existing prototype into WeBots to explore object detection with objects attached to another bot.
- Cole

- ○ The past 2 weeks I created a 2D desktop "game" version of our project so I could start working on and experimenting with the follower algorithm code. For the next 2 weeks, I plan on continuing this work. I know Ben has been working on the WeBots 3D modeling, so once he gets that working, I will hopefully be able to transfer over my follower algorithm code to the WeBots simulation.

Summary of Advisor Meeting (if applicable)
Our first meeting is scheduled for the week of Feb. 8th.