Lab Worksheet

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**Lab Partner Name (if you worked together and are submitting the same document or mostly the same answers): Riley Lawson**

**Lab Section**: S9-E1

This lab worksheet is a final deliverable after a lab is completed, referred to as the postlab. A postlab will not be assigned for every lab. You have two deliverables for every lab, the prelab and demonstrations. The postlab is a third deliverable for some labs.

1. **Prelab assignment BEFORE LAB**: Posted with the lab manual, typically involves a system sketch, submitted in Canvas before the start of your lab section, may be worked on, reviewed and/or used by lab partners in class on Tuesday during lab planning
2. **Demonstrations IN LAB**: Demonstrated/discussed with a TA in lab (or later) and evaluated using a rubric in Canvas (functional demo of a lab milestone, debug demo using debugging tools to explain something about the internal workings of your system, Q&A demo showing ability to formulate and respond to questions)
3. **Postlab assignment AFTER LAB**: Submitted in Canvas after demonstrations, may be reviewed by lab partners in class, consists of three items (prelab planning notes, lab notes, and lab retrospective)

Deliverable #1 has its own Canvas assignment submission. (10 points)

Deliverable #2 has an evaluation rubric used as a checklist and scored by TAs in Canvas. (40 points)

Deliverable #3 has its own Canvas assignment submission. (30 points)

This worksheet will help you develop the items needed for deliverable #3.

1. **PRELAB PLANNING NOTES**
2. What are three questions you want to explore from your lab planning work?

I want to explore how the cybots move. I also want to know what goes into the coding of the cybots and what things you can do with them.

1. What are several tasks you identified in your planning (for you and lab partner)?

First, we were going to have to start with making the cybot move. Then we will make sure that we can get it to rotate. After that we will make sure we can get the cybot to do basic maneuvering around obstacles that it runs into.

1. **LAB NOTES**

During lab, keep notes about the following so that you can submit information with this deliverable.

1. Results related to up to three planning questions (might be answers, might be more questions, write brief summaries, don’t include code files)
2. Any additions, refinements, or corrections to the prelab system sketch based on what you learned (include an updated sketch, or briefly describe at least one update you made)
3. Description of your debug demo (what did you demo and why, what did you find, a paragraph is fine, may want to include a screenshot)

* We were demoing our code because We were having trouble determining what was causing an infinite loop and it ended up being a problem with how one of the functions behaved. We thought we just needed to store the value into the sum when we just needed to add to it each time. We also had to remove the static parts of the functions.
* A source of confusion was that the TAs told us to use a function called oi\_getDistance and oi\_getDegrees. We never seemed to figure out how to use these functions even after removing the static from the functions. The original code given seemed to work perfectly fine, so we ended up going with that.
* We noticed that the information of the cybot is contained within a struct of type oi\_t. This is how information like distance and the current angle is stored. However, this struct has a lot of other method objects within it that I do not fully understand yet and what their functions are.
* Because we could store the distance within sum, we decided to return the sum for the move functions. This way we could track how far the cybot had moved.
* The cybots move from a function called oi\_setWheels() this function takes in
* I also noticed that there is a function called oi\_play\_song(). I am intrigued by this and might mess around with it a little bit.

1. **LAB RETROSPECTIVE**

Take 10-15 minutes and answer these questions as you think about your lab experience. You don’t need to describe everything, try to pick something notable.

1. What did we set out to do?

We tried to move the cybot in an efficient and clean manner.

1. What actually happened?

We had a couple road blocks and our cybot would occasionally move infinitely. We also noticed that there was a little bit of error in how the cybot would move and how though the math should add up the ending location is not exactly the same when moving multiple times.

1. Why did it happen?

There were a few difficulties in the understanding of how the code works.

1. What are we going to do next time (to improve)

I think next time it would be beneficial of us to look at the code before hand and try to get an understanding of some of it first. That way we aren’t constantly running into silly mistakes.