Kent Mark

Cpre 288 – Post-lab 2

2/4/20

Post-lab 2

1. **Prelab Planning Boards**
2. The three priority questions I formulated during my lab planning work were:
3. *What sensors will we be using to help guide the Cybot?*
4. *How much of the open interface will we be using?*
5. *How well will the structured pairing work?*
6. During my planning I realized that both me and my partner would need to brush up our knowledge of the Roomba’s commands listed in its open interface documentation; I figured we should also continue to brush up on our knowledge of C, more specifically loops and conditionals.
7. **Lab Notes**
8. For my three priority questions I found:
9. Contrary to what I initially thought we only needed to use one sensor, the bump sensor, to complete the lab.
10. We ended up using a relatively small amount of the open interface for this lab.
11. The structured pairing was pretty cool because it gave both of us an opportunity to write some code and take down notes.
12. The only correction that I should have made to my prelab sketch was removing some blocks from my block diagram.
13. For the debug demo we showed that we could make the Cybot move forward a set distance. We then showed that we could make the Cybot move in a square pattern, we did this by making the Cybot move forward some distance, turn right, and repeat these steps four times, thus making a square. Lastly, we demonstrated that we could make the Cybot move forward, use it’s bumpers to detect if it hit an object, reverse away from said object, turn, and continue to cover a preset distance all the while adjusting its course using the previously mentioned steps.
14. **Lab Retrospective**
15. In this lab we set out to use our coding ability and the Cybot’s OI commands to make it move around, turn, and detect collisions while moving.
16. We were able to perform step 1 and 2 relatively easily and quickly. We did run into some issues trying to perform step 3 and spend the remaining lab time as well as time outside the lab debugging our code and testing the Cybot.
17. Our struggles came about mainly because of our misuse of the oi\_free garbage collector. We found that there were instances where oi\_free was being called which basically wiped out important oi commands before they were executed in our loops.
18. Next time we will try to take more time read the documentation given to us so that we have a firmer understanding of what certain method calls are actually doing.