Byron Laferriere

IT-209

Dr. Ostrowski

Analysis Paper: Initial Software Prototype

**Insights and Benefits**

Three insights that I noticed about the prototype that will benefit my implementation of the software in Java would be that the sensors detected lighter colored objects easier than darker colored objects, the buzzer on the robot does not sound like a squeaking rodent, and finally that having a behavior ‘chase’ would probably not be a plausible implementation. Knowing this now from the prototyping exercise, I will have to re-evaluate the design plans and probably remove some of the features I was hoping to be able to add. Sticking to the avoidance sensors, light changes, and homing the robot when not currently active. Although the light sensor on the robot proved to be more efficient chasing dark than light, I think with enough tinkering I could find a situation where it would succeed. These insights will benefit the Java implementation by eliminating overcomplicated and unnecessary configurations.

**Improvement**

The areas that could be improved upon, now that the initial prototyping implantation has been finished, are what I called ‘avoid right’ and ‘avoid left’ behaviors. These behaviors were designed to be implemented when ‘roaming’ but were actually instantiated when following. It was difficult to decipher how this would work initially but using three different colored lights helped indicate which behavior the robot was exhibiting. I need to learn how to combine these avoidance techniques with the ‘roaming’ behavior using an arbiter on Snap!. Now that the prototype has been finished, I can learn how to work better with the way the robot switches between behaviors, to make these two behaviors cooperate with the overall system better.

**Further Investigation**

Things that are unclear to me still mostly revolve around figuring out how the sensors operate and learn how to work with them more consistently. When creating the blocks for the program, it looks like it should control the robot in a way similar to pseudocode that was written out but actually performs differently. I need to investigate the way the loops work more as well, so that I can better control the iterations through the blocks. More experimentation within Snap! will help me develop a more solid understanding of how to manipulate the robot’s capabilities and gain better control of the robot to finish out my final project.