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IT-209

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Milestone Two: Prototype

The two critical behaviors that will be addressed for this prototyping assignment will be escape left and escape right. This assignment was tricky at the beginning and I had to visit the BirdBrains website to get some ideas of how to begin incorporating these behaviors. When the robot detects an object with its sensors, it will begin the escape sequence that will combine the three available features within the robot. When an object is detected within the 2-4 inches range, the Finch will plan a short escape and change its light according to the direction it is escaping. Once it has escaped, it will emit a squeak to tease the cat playing with it and then change back to the original driving color. I wrote out some pseudocode to lay out the design that I wanted to instantiate for the escape behaviors. This helped me visualize the blocks that would be needed before I began actually laying the blocks.

**Escape**

**WHILE ( Finch != Home)**

**IF ( SENS\_L == TRIGGERED)**

**LEFT WHEEL SPEED == 100;**

**RIGHT WHEEL SPEED == 50;**

**BEAK COLOR == GREEN;**

**NOISE == ON;**

**ELIF (SENS\_R == TRIGGERED)**

**LEFT WHEEL SPEED == 50;**

**RIGHT WHEEL SPEED == 100;**

**BEAK COLOR == RED;**

**NOISE == ON;**

**ELSE (**

**BEHAVIOR == DRIVE MODE;**

**)**

**ENDWHILE**

The next critical behaviors that will need to be addressed to move this project closer to completion will be the drive mode and then home. This exercise has given me a good idea of how to design these behaviors and was a massively helpful foundational piece for the final project. By using a ‘forever’ loop in combination with ‘if’ loops, I was able to combine two competing behaviors within the robot to cooperate. These nested ‘if’ loops repeat until the left or right obstacle is identified respectively. By pressing key number one, the right obstacle escape is initiated. The left obstacle avoidance behavior was assigned the number two. I also began to work on the ‘drive’ mode within this zipped project, but will need to come back to it to perfect it. This behavior was initialized under the number three for now. I look forward to spending more time with this project and coming one step closer to the final project completion.