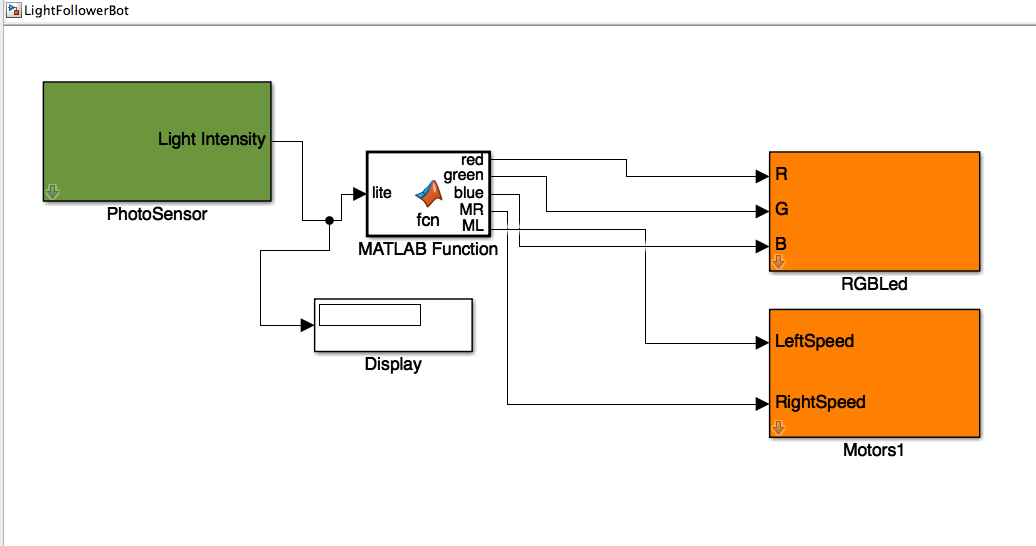
Goals:

1. Create a light following robot
2. Fine tune the values so the robot can easily follow a beam of light from a flashlight

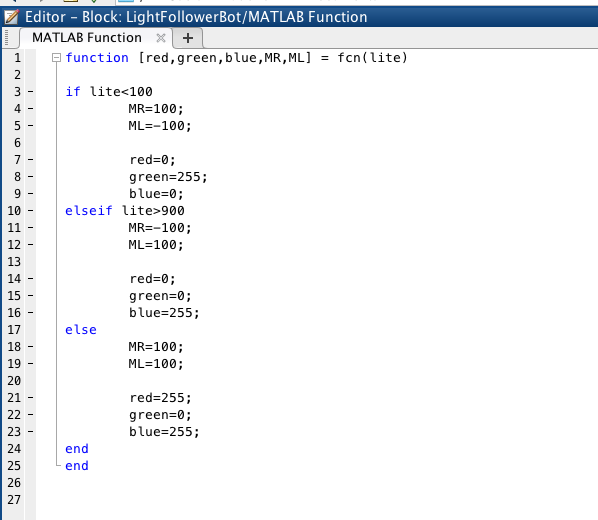
Standards Covered: (f), (g), (h), (i), (j)

Reference: Index: LightFollowerBot.slx

While the “DarknessFollowBot” takes time and effort to refine a much smoother Simulink model for the miniQ, which uses light sensors, is the Light Follower Bot. In this code the MiniQ robot will follow light; either a light source placed in a distance or a beam of light from something like a flashlight:



Sequence:

1. Have students take light sensor readings from a beam of light, for example, coming from a flashlight. Discuss and share findings. *(10 min)*
2. Give students time to experiment with creating Simulink code for a light following robot given what they have learned with MATLAB/SIMULINK and Flowstates. *(20 min)*
3. After students have been given time to work on the project review and explain the function in the file LightFollowerBot.slx *(20 min)* 
4. The first line describes the input and output variables [red,green, blue] as well as values for the motors [MR and ML]. And input variable “lite” is defined as well. How the code works is every time lite<100, meaning that more light is being detected on the left side therefore causing the miniQ to take a left turn (MR= 100, ML=-100). The inverse is true for if the lite value >900 which means there is more light on the right side therefore causing a right turn (MR=-100,ML=100). Otherwise, as begins in line 17, the miniQ robot will travel in a straight line.

Evaluation:

1. Changing the speed variables for the miniQ robot. *(10 min)*
2. Adjust the light readings so they work best in your location.

Activity to Consider:

1. With a set of flashlights turn out the lights and see if you can maneuver your miniQ into a particular location using only the beam of light. *(30 min)*

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