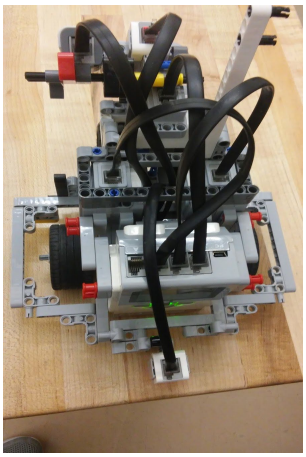
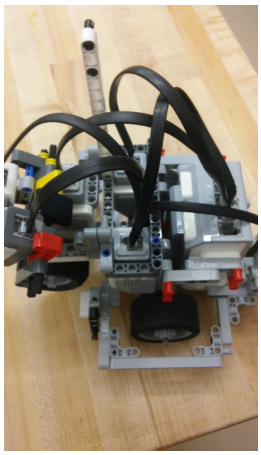
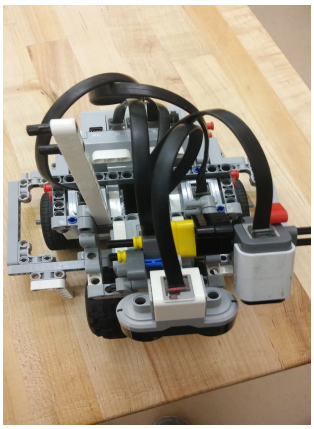
Lego soccer Robots

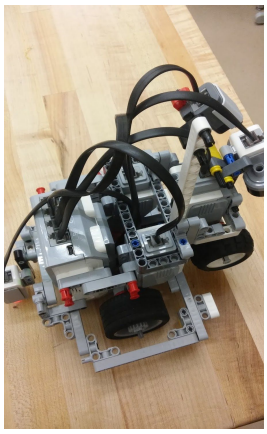
The Advanced Robotics Class at Oak Harbor High School designed two robots to compete in Lego Soccer for Robogames. More information on the game can be found here http://robogames.net/rules/lego-soccer.php

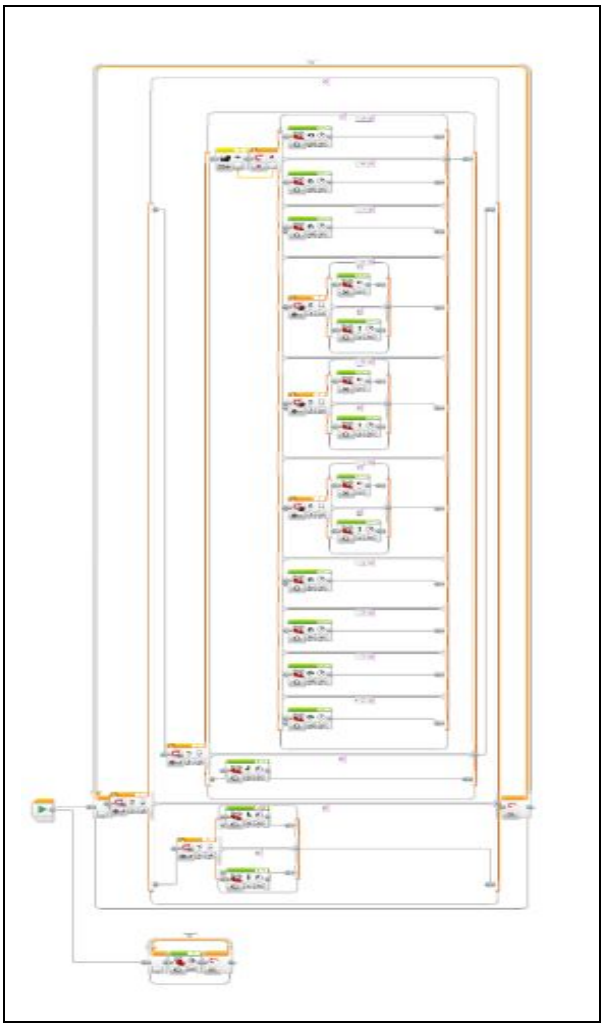
Goalie robot







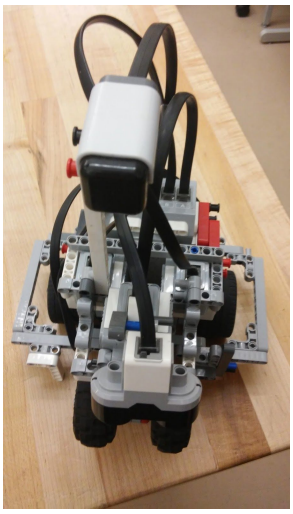
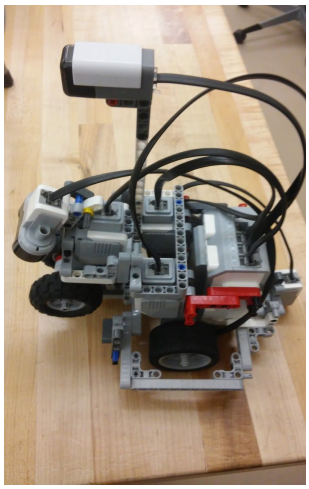
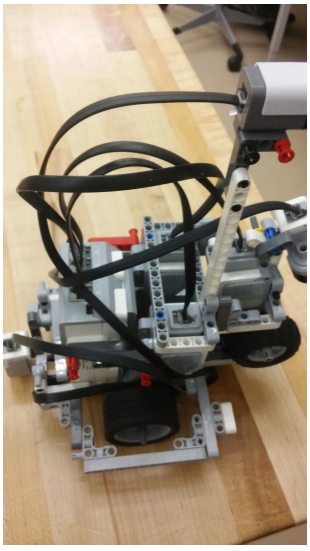
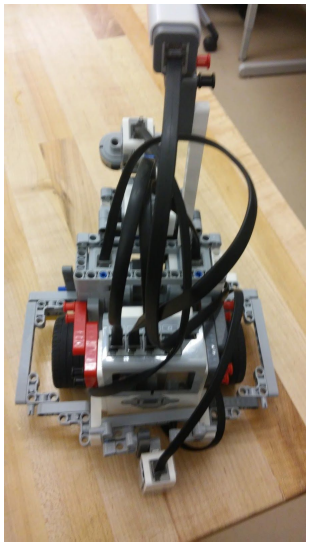




Goalie Robot:

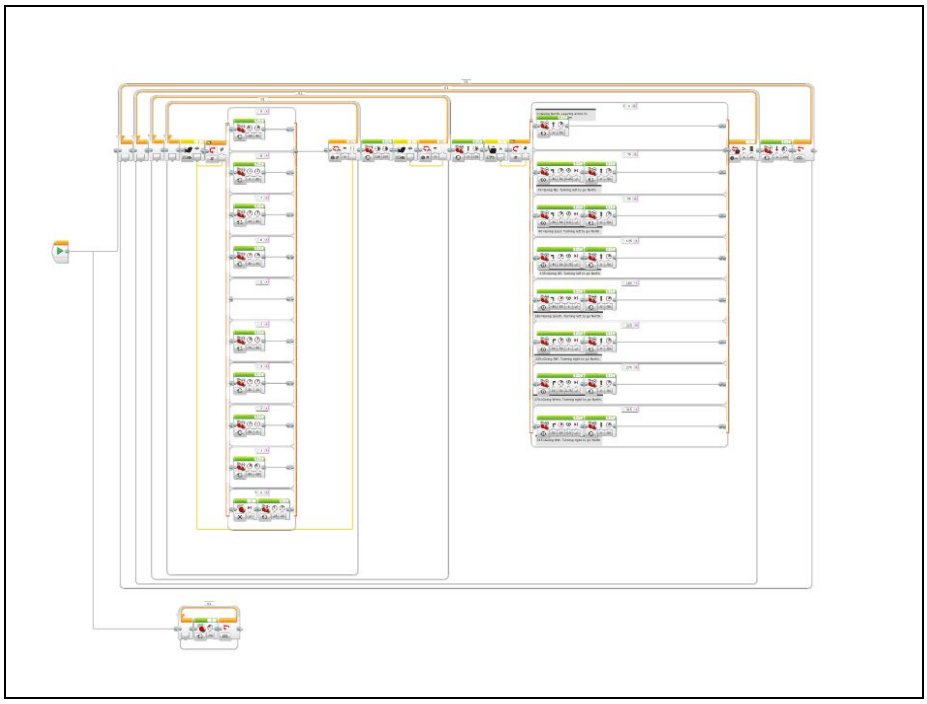
This robot has two light sensors on the front to detect the different colors of the playing field. The robot also has an ultrasonic sensor to detect distance to another object. The last sensor on this robot is a Hi-Tech IR sensor to follow the IR ball. In the program, the robot checks the light sensors first, since it has to stay in the goalie box. If both light sensors see black, then the robot will back straight to get back in the goalie box. If the light sensor on the right sees black but the one on the left does not, then it will back up to the right. If the light sensor on the left sees black but the one on the right doesn't, then it will back up to the left. If both sensors see black, then the robot will check the IR sensor to search for the ball. If the robot doesn't see the ball, then it will spin around in circles until it does. Once the robot sees the ball, it will follow the ball. When the ball is in front of the robot, it will check the ultrasonic sensor. If the robot detects the ball being right in front of it, then the robot will stop. If the robot does not detect the ball right in front of it, then the robot will charge forward toward the ball. This program repeats itself an infinite number of times.

Offense robot

Offense Robot:

This robot has an ultrasonic sensor to detect distance to another object. Our offense robot also uses a infrared sensor. This detects where the ball is and then the robot moves towards the ball, until it detects the ball in front of it. If it detects the ball in front of it will attempt to grab the ball. The robot will use the compass to see what direction it is facing. If the robot is not facing North it will turn North. Then the robot will head in that direction hopefully scoring a goal. Below is the program for this.



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