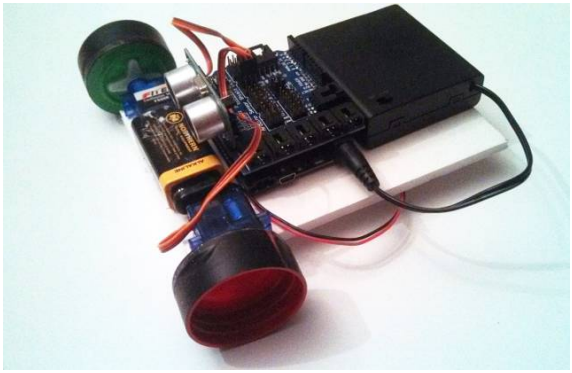
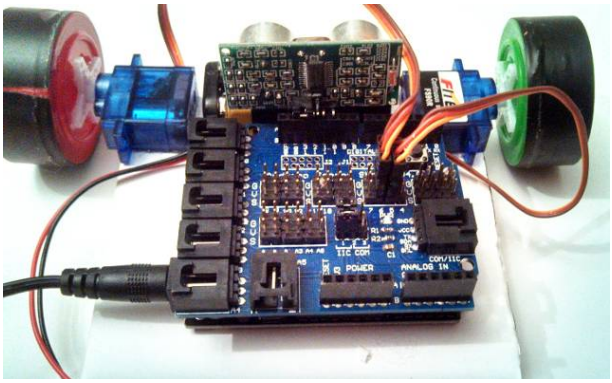
Let's Code Blacksburg! Arduino Sensors and Robotics Workshop

v2015-04-28a_tweeks
URL: https://github.com/LetsCodeBlacksburg/LCBB_arduino-collision-bot





1. **Build your collision avoidance bot:**
   -one 6x4 piece of cardboard or foam board
   -one arduino microcontroller, mounted as shown
   -one ultrasonic sensor ("eyes"), DO NOT PLUG IN until step #2
   -two continuous rotating servos, mounted as shown
   -one battery holder w/on/off switch, mounted as shown
   -three bottle caps (for wheels and "rear dragger"), hot glued

   TA SIGN-OFF: _____

   WARNING: DO NOT POWER UP or plug in USB until TA has inspected, and sensor configuration code in step#2 has been uploaded to the arduino.

2. **Upload sensor code "ping_US-100_sensor.ino" to Arduino & Test**
   -Copy code from github account: https://github.com/LetsCodeBlacksburg/LCBB_arduino-collision-bot

   -Start up Arduino program (after getting "blink") working **TA SIGN-OFF:** _____
   -Paste ping_US-100_sensor.ino into arduino
   -Compile (will not work yet). Get TA Sign-off: **TA SIGN-OFF:** _____
   -After sign-off, connect the ping sensor as shown using pins 10, 11, 12, 13 and GND on the sensor shield
   -Test sensor, using the serial console to witness the sensor range **TA SIGN-OFF:** _____

3. **Connect the two servos to pin headers 5&6 on the sensor shield**
   -Connect the servos (while unplugged/powered off)
   -Copy the "two-servos-test.ino" servo test code from github URL (above)
   -Test your servos and get TA sign-off: **TA SIGN-OFF:** _____

   BOT CHALLENGE: Try to program your bot to move around to form a 2 foot x 2 foot square

   TA SIGN-OFF: _____

4. **Make Your Bot Smart - Combine Servo Code & Ping Sensor Code**
   -Combine the ping sensor and servo code to make your bot stop and avoid collisions.

   TA SIGN-OFF: _____