Robotic Systems Code Bin

Lab: Lab 3

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Date: 10/10/18

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| **This code bin is for all code to be placed into after the lab has been complete. All code placed here should not be double spaced. Indenting shouldn’t matter. Make sure all code is legible and spaced appropriately. We hope to see comments in the code. Code should be separated by project name. If there are multiple files in a project that need to have code placed here, place each one under a separate heading titled by the file name. This page is a title page and needs to be at the front of each Code Bin.**  **DO NOT PRINT THIS FILE** |

# Jjn6736\_RS\_Ultrasonic

## main.cpp

#include <Arduino.h>

#define trigger\_Pin 12 //output

#define echo\_Pin 14 //input

long duration, distance;

void setup() {

Serial.begin(9600);

pinMode(trigger\_Pin, OUTPUT);

pinMode(echo\_Pin, INPUT);

// put your setup code here, to run once:

}

void loop() {

// put your main code here, to run repeatedly:

digitalWrite(trigger\_Pin, LOW);

delayMicroseconds(2);

digitalWrite(trigger\_Pin, HIGH);

delayMicroseconds(10);

digitalWrite(trigger\_Pin, LOW);

duration = pulseIn(echo\_Pin, HIGH);

//Serial.println(duration);

distance = .0175 \* duration+.0037;

Serial.print(distance);

Serial.println(" cm");

delay(500);

}

# Jjn6736\_RS\_IRSensor

## main.cpp

#include <Arduino.h>

#define sensor A0

void setup() {

Serial.begin(9600);

pinMode(sensor, INPUT);

}

void loop() {

int value = 0;

int avg = 0;

int distance = 0;

for(int i = 0; i<10 ;i++)

value = value + analogRead(sensor);

avg = value / 10;

distance = 6127.9\*pow(avg, -0.9);

Serial.println(distance);

//Serial.println(avg);

delay(1000);

}

# Jjn6736\_RS\_Lidar

## main.cpp

#include <Arduino.h>

#include <Wire.h>

#include <VL53L0X.h>

VL53L0X sensor;

void setup(){

Serial.begin(9600);

Wire.begin();

pinMode(13, OUTPUT);

sensor.init();

sensor.setTimeout(500);

// Start continuous back-to-back mode (take readings as

// fast as possible). To use continuous timed mode

// instead, provide a desired inter-measurement period in

// ms (e.g. sensor.startContinuous(100)).

sensor.startContinuous();

}

void loop(){

int distance;

distance = sensor.readRangeContinuousMillimeters();

Serial.print(distance);

if (sensor.timeoutOccurred()) { Serial.print(" TIMEOUT"); }

digitalWrite(13, HIGH);

delay(distance\*1.5);

digitalWrite(13, LOW);

delay(distance\*1.5);

Serial.println();

}

# Jjn6736\_RS\_IRReflection

## main.cpp

#include <Arduino.h>

int sensor = 2;

int readQD();

void setup() {

Serial.begin(9600);

}

void loop() {

int sensorVal = readQD();

if(sensorVal >= 3000)

Serial.print("B ");

else

Serial.print("W ");

delay(2000);

}

int readQD(){

pinMode(sensor, OUTPUT);

digitalWrite( sensor, HIGH );

delayMicroseconds(10);

pinMode(sensor, INPUT );

long time = micros();

while (digitalRead(sensor) == HIGH && micros() - time < 3000);

int diff = micros() - time;

return diff;

}