20160816 ServoCompassSeries2

// This code works and gives degrees!!! UNO A4/A5 - 2560 A20/21 connections photo below

// SDA A4 , SCL A5

#include <Wire.h>

#include <Servo.h>

Servo myservo; // create servo object to control a servo

// twelve servo objects can be created on most boards

#define Addr 0x1E // 7-bit address of HMC5883 compass

int pos = 0; // variable to store the servo position

void setup() {

Serial.begin(9600);

Serial.println();

Wire.begin();

// Set operating mode to continuous

Wire.beginTransmission(Addr);

Wire.write(byte(0x02));

Wire.write(byte(0x00));

Wire.endTransmission();

myservo.attach(9); // attaches the servo on pin 9 to the servo object

}

void loop() {

int x, y, z;

// Initiate communications with compass

Wire.beginTransmission(Addr);

Wire.write(byte(0x03)); // Send request to X MSB register

Wire.endTransmission();

Wire.requestFrom(Addr, 6); // Request 6 bytes; 2 bytes per axis

if(Wire.available() <=6) { // If 6 bytes available

x = Wire.read() << 8 | Wire.read();

z = Wire.read() << 8 | Wire.read();

y = Wire.read() << 8 | Wire.read();

}

// If compass module lies flat on the ground with no tilt,

// just x and y are needed for calculation

float heading=atan2(x, y)/0.0174532925;

int iheading;

if(heading < 0) heading+=360;

{

heading=360-heading; // N=0/360, E=90, S=180, W=270

}

iheading = heading;

pos = heading;

if(heading > 180)

{

pos = heading - 180;

}

pos = 180 - pos; // Invert for motion of servo (view from top

myservo.write(pos); // tell servo to go to position in variable 'pos'

// delay(150); // waits 15ms for the servo to reach the position

Serial.println(" ");

Serial.print("Heading: ");

Serial.println(heading);

Serial.print("Position: ");

Serial.println(pos);

delay(500);

}