**Data Acquisition  
2 Wheels Car**

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Section: 1

# Arduino code 1 Drive

#define front 0

#define back 1

#define right 2

#define left 3

#define inc 4

#define dec 5

#define in1 13

#define in2 12

#define en1 11

#define en2 10

#define in3 7

#define in4 6

int thespeed=85,speed1=85,speed2=85,debounce1=1,debounce2=1,x=0,y=0;

void setup() {

pinMode(front,INPUT);

pinMode(back,INPUT);

pinMode(right,INPUT);

pinMode(left,INPUT);

pinMode(inc,INPUT);

pinMode(dec,INPUT);

pinMode(in1,OUTPUT);

pinMode(in2,OUTPUT);

pinMode(en1,OUTPUT);

pinMode(en2,OUTPUT);

pinMode(in3,OUTPUT);

pinMode(in4,OUTPUT);

}

void loop() {

if (digitalRead(inc) && debounce1){

thespeed=thespeed+85 ;

if (thespeed >= 255){thespeed=255;}

speed1=thespeed;

speed2=thespeed;

debounce1=0;}

else if (digitalRead(dec) && debounce2){

thespeed = thespeed - 85 ;

if (thespeed <= 85){thespeed=85;}

speed1=thespeed;

speed2=thespeed;

debounce2=0;}

if (!digitalRead(inc)){debounce1=1;}

if (!digitalRead(dec)){debounce2=1;}

analogWrite(en1,speed1-y);

analogWrite(en2,speed2-x);

if(!digitalRead(front) && !digitalRead(left) && !digitalRead(back) && !digitalRead(right))

{digitalWrite(in1,LOW);digitalWrite(in2,LOW);digitalWrite(in3,LOW);digitalWrite(in4,LOW);}

else if (digitalRead(front) && digitalRead(left) && !digitalRead(right) && !digitalRead(back)){

y=speed2/2;

digitalWrite(in1,HIGH);digitalWrite(in2,LOW);

digitalWrite(in3,HIGH);digitalWrite(in4,LOW);}

else if (digitalRead(back) && digitalRead(left) && !digitalRead(right) && !digitalRead(front)){

y=speed2/2;

digitalWrite(in2,HIGH);digitalWrite(in1,LOW);

digitalWrite(in4,HIGH);digitalWrite(in3,LOW);}

else if (digitalRead(front) && digitalRead(right) && !digitalRead(left) && !digitalRead(back)){

x=speed1/2;

digitalWrite(in1,HIGH);digitalWrite(in2,LOW);

digitalWrite(in3,HIGH);digitalWrite(in4,LOW);}

else if (digitalRead(back) && digitalRead(right) && !digitalRead(left) && !digitalRead(front)){

x=speed1/2;

digitalWrite(in2,HIGH);digitalWrite(in1,LOW);

digitalWrite(in4,HIGH);digitalWrite(in3,LOW);}

else if (digitalRead(front) && !digitalRead(left) && !digitalRead(right) && !digitalRead(back)){

digitalWrite(in1,HIGH);digitalWrite(in2,LOW);

digitalWrite(in3,HIGH);digitalWrite(in4,LOW);

x=0;y=0;}

else if (digitalRead(back) && !digitalRead(left) && !digitalRead(right) && !digitalRead(front)){

digitalWrite(in2,HIGH);digitalWrite(in1,LOW);

digitalWrite(in4,HIGH);digitalWrite(in3,LOW);

x=0;y=0;}

else if (digitalRead(right) && !digitalRead(front) && !digitalRead(back) && !digitalRead(left)){

digitalWrite(in2,HIGH);digitalWrite(in1,LOW);

digitalWrite(in3,HIGH);digitalWrite(in4,LOW);

x=0;y=0;}

else if (digitalRead(left) && !digitalRead(front) && !digitalRead(back) && !digitalRead(right)){

digitalWrite(in1,HIGH);digitalWrite(in2,LOW);

digitalWrite(in4,HIGH);digitalWrite(in3,LOW);

x=0;y=0;}

else if ((digitalRead(front) && digitalRead(back)) || (digitalRead(right) && digitalRead(left))){

digitalWrite(in1,LOW);digitalWrite(in2,LOW);

digitalWrite(in3,LOW);digitalWrite(in4,LOW);

x=0;y=0;}

}

# Arduino code 2 LCD

#include<LiquidCrystal.h>

#define front 0

#define back 1

#define right 2

#define left 3

#define inc 4

#define dec 5

int speed1=85,debounce1=1,debounce2=1;

LiquidCrystal lcd(13,12,11,10,9,8);

void setup() {

lcd.begin(16,2);

lcd.setCursor(0,0);lcd.print("Speed m");

lcd.setCursor(0,1);lcd.print("Dir. ");

pinMode(front,INPUT);

pinMode(back,INPUT);

pinMode(right,INPUT);

pinMode(left,INPUT);

pinMode(inc,INPUT);

pinMode(dec,INPUT);

}

void loop() {

if (digitalRead(inc) && debounce1){

speed1=speed1+85 ;

if (speed1 >= 255){speed1=255;}

debounce1=0;}

else if (digitalRead(dec) && debounce2){

speed1 = speed1 - 85 ;

if (speed1 <= 85){speed1=85;}

debounce2=0;}

if (!digitalRead(inc)){debounce1=1;}

if (!digitalRead(dec)){debounce2=1;}

if (speed1 == 85){lcd.setCursor(7,0);lcd.print("in ");}

else if (speed1 == 170){lcd.setCursor(7,0);lcd.print("id ");}

else if (speed1 == 255){lcd.setCursor(7,0);lcd.print("ax ");}

else {lcd.setCursor(7,0);lcd.print("out ");}

if(!digitalRead(front) && !digitalRead(left) && !digitalRead(back) && !digitalRead(right))

{lcd.setCursor(6,1);lcd.print("stop ");}

else if (digitalRead(front) && digitalRead(left)){

lcd.setCursor(6,1);lcd.print("F.L ");}

else if (digitalRead(back) && digitalRead(right)){

lcd.setCursor(6,1);lcd.print("B.R ");}

else if (digitalRead(front) && digitalRead(right)){

lcd.setCursor(6,1);lcd.print("F.R ");}

else if (digitalRead(back) && digitalRead(left)){

lcd.setCursor(6,1);lcd.print("B.L ");}

else if (digitalRead(front) && !digitalRead(left) && !digitalRead(right)){

lcd.setCursor(6,1);lcd.print("front");}

else if (digitalRead(back) && !digitalRead(left) && !digitalRead(right)){

lcd.setCursor(6,1);lcd.print("back ");}

else if (digitalRead(right) && !digitalRead(front) && !digitalRead(back)){

lcd.setCursor(6,1);lcd.print("right");}

else if (digitalRead(left) && !digitalRead(front) && !digitalRead(back)){

lcd.setCursor(6,1);lcd.print("left ");}

else if ((digitalRead(right) && digitalRead(left)) || (digitalRead(front) && digitalRead(back))){

lcd.setCursor(6,1);lcd.print("error");}

}

