Motor control

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RBT173 – Introduction to Microcontrollers

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The Motor Control assignment was fun and I did it in both Tinkercad and real life. I applied the code I wrote in Tinkercad to the Arduino in real life and the DC motors came to life. This is one of the last projects for this class. The last project will be a robot car from Elegoo. Again this was a fun project. I just wish we had more time

<https://youtu.be/WLl9hd3ob0c> - Motor Control link.

Here is the link to the video.

// C++ code

//

int rightEnable = 3;

int forwardRight = 4;

int reverseRight = 5;

int leftEnable = 6;

int forwardLeft = 7;

int reverseLeft = 8;

void setup() {

pinMode(rightEnable, OUTPUT);

pinMode(forwardRight, OUTPUT);

pinMode(reverseRight, OUTPUT);

pinMode(leftEnable, OUTPUT);

pinMode(forwardLeft, OUTPUT);

pinMode(reverseLeft, OUTPUT);

}

void loop() {

analogWrite(rightEnable, 255);

analogWrite(leftEnable, 255);

forward();

delay(5000); // Wait for 1000 millisecond(s)

rightTurn();

delay(5000); // Wait for 1000 millisecond(s)

reverse();

delay(5000); // Wait for 1000 millisecond(s)

leftTurn();

delay(5000); // Wait for 1000 millisecond(s)

spinRt();

delay(5000); // Wait for 1000 millisecond(s)

spinLt();

delay(5000); // Wait for 1000 millisecond(s)

stop();

delay(5000); // Wait for 1000 millisecond(s)

}

void rightForward() {

digitalWrite(reverseRight, LOW);

digitalWrite(forwardRight, HIGH);

}

void rightReverse() {

digitalWrite(reverseRight, HIGH);

digitalWrite(forwardRight, LOW);

}

void leftForward() {

digitalWrite(reverseLeft, LOW);

digitalWrite(forwardLeft, HIGH);

}

void leftReverse() {

digitalWrite(reverseLeft, HIGH);

digitalWrite(forwardLeft, LOW);

}

void forward() {

rightForward();

leftForward();

}

void reverse() {

rightReverse();

leftReverse();

}

void rightTurn() {

leftForward();

analogWrite(rightEnable, 128);

rightForward();

}

void leftTurn() {

rightForward();

analogWrite(leftEnable, 128);

leftForward();

}

void spinRt() {

rightReverse();

leftForward();

}

void spinLt() {

leftReverse();

rightForward();

}

void stop(){

analogWrite(rightEnable, 0);

analogWrite(leftEnable, 0);

}