**Output example**

int LED = 11;

int t = 500;

void setup()

{

pinMode(LED, OUTPUT);

}

void loop()

{

digitalWrite(LED, HIGH);

delay(t);

digitalWrite(LED, LOW);

delay(10-t);

}

From here increase the frequency until PWM

**Input example**

int switchPin = 4;

int LED = 11;

boolean toggle = false;

void setup()

{

pinMode(switchPin, INPUT);

pinMode(LED, OUTPUT);

}

void loop()

{

if(digitalRead(switchPin) == HIGH)

{

delay(5);

toggle = !toggle;

}

while(digitalRead(switchPin) == HIGH){}

if(toggle == true)

{

digitalWrite(LED, HIGH);

}

else

{

digitalWrite(LED, LOW);

}

}

**POT and serial example**

int LED = 11;

int pot = 0;

void setup()

{

pinMode(LED, OUTPUT);

Serial.begin(9600);

}

void loop()

{

Serial.println(analogRead(pot));

analogWrite(11, map(analogRead(pot), 0, 1023, 0, 255));

delay(50);

}

**I2C example with temperature sensor**

#include <Wire.h>

int ID = 72;

void setup()

{

Serial.begin(9600);

Wire.begin();

}

void loop()

{

Wire.beginTransmission(ID);

Wire.write(0);

Wire.endTransmission();

Wire.requestFrom(ID, 1);

while(Wire.available() == 0);

float temp = Wire.read();

Serial.print(temp);

Serial.println(" degrees Celsius");

delay(100);

}

**First SPI example**

#include <SPI.h>

int LE = 10;

int OE = 9;

int data = 0b00001111;

void setup()

{

pinMode(LE, OUTPUT);

pinMode(OE, OUTPUT);

SPI.begin();

}

void loop()

{

digitalWrite(OE, HIGH);

digitalWrite(LE, HIGH);

SPI.transfer(data);

digitalWrite(LE, HIGH);

digitalWrite(LE, LOW);

digitalWrite(OE, LOW);

delay(200);

}

**Final example with POT and SPI**

#include <SPI.h>

int LE = 10;

int OE = 9;

int pot = 0;

int value;

int binvalue;

int data[] = {0b00000000, 0b10000000, 0b11000000, 0b11100000, 0b11110000};

void setup()

{

pinMode(LE, OUTPUT);

pinMode(OE, OUTPUT);

SPI.begin();

}

void loop()

{

value = analogRead(pot);

binvalue = map(value, 0, 1023, 0, 5);

digitalWrite(OE, HIGH);

digitalWrite(LE, HIGH);

SPI.transfer(data[binvalue]);

digitalWrite(LE, HIGH);

digitalWrite(LE, LOW);

digitalWrite(OE, LOW);

}