//#define IR\_SAMPLE 25

//#define PINIR A0 // PA3

//#define PINLED 9 // PD3

void setup() {

pinMode (A0, INPUT);

analogReference(DEFAULT);

Serial.begin(9600);

}

void loop() {

int distanceCM, median, LEDistance;

float current;

int ir\_val[25] = {};

// Gather samples

for (int i=0; i<25; i++){

ir\_val[i] = analogRead(A0);

}

// Sort Samples

for(int i=0; i<(25-1); i++) {

bool flag = true;

for(int o=0; o<(25-(i+1)); o++) {

if(ir\_val[o] > ir\_val[o+1]) {

int t = ir\_val[o];

ir\_val[o] = ir\_val[o+1];

ir\_val[o+1] = t;

flag = false;

}

}

if (flag) break;

}

// get mid value

median = ir\_val[25/2];

// disctance calculations

distanceCM = 29.988 \* pow(map(median, 0, 1023, 0, 5000)/1000.0, -1.173);

LEDistance = (distanceCM\*255/73) -24;

analogWrite(9, LEDistance);

// // Print the measured distance to the serial monitor:

// Serial.print("Mean distance: ");

// Serial.print(distanceCM);

// Serial.println(" cm");

delay(1000);

}