DISTANCE BASED LED CONTROL(USING STM32 AND ULTRASONIC SENSOR)

CODE:

#define TRIG\_PIN D8

#define ECHO\_PIN D9

#define LED\_PIN D7

void setup() {

pinMode(TRIG\_PIN, OUTPUT);

pinMode(ECHO\_PIN, INPUT);

pinMode(LED\_PIN, OUTPUT);

Serial.begin(9600);

}

void loop() {

long duration, distance;

// Send a pulse from the TRIG pin

digitalWrite(TRIG\_PIN, LOW);

delayMicroseconds(2);

digitalWrite(TRIG\_PIN, HIGH);

delayMicroseconds(10);

digitalWrite(TRIG\_PIN, LOW);

// Read the ECHO pin

duration = pulseIn(ECHO\_PIN, HIGH);

// Calculate the distance

distance = (duration / 2) / 29.1;

// Print the distance to the Serial Monitor

Serial.print("Distance: ");

Serial.print(distance);

Serial.println(" cm");

// Control the LED based on the distance

if (distance < 50) {

digitalWrite(LED\_PIN, HIGH); // Turn on LED if distance is less than 10 cm

} else {

digitalWrite(LED\_PIN, LOW); // Turn off LED otherwise

}

delay(500);

}

