### **Assignment 2**

### Develop an "Automatic garage door opening system". Use an Ultrasonic sensor to detect if there is a vehicle in front of the garage. if any vehicle is detected open the garage door (rotate the servo motor) for some time and close it.

Equipment needed to implement smart gate

1.ESP32 chip 2.Ultra sonic sensor 3.Servo motor

Program:

#include<Servo.h>

Servo myServo;

int echopin=4;

int trigpin=5;

void setup()

{

pinMode(echopin,INPUT);

pinMode(trigpin,OUTPUT);

Serial.begin(9600);

myServo.attach(13);

}

void loop()

{

digitalWrite(trigpin,HIGH);

digitalWrite(trigpin,LOW);

int duration=pulseIn(echopin,HIGH);

int distance=duration\*0.0343/2;

Serial.print("the distance is");

Serial.println(distance);

if(distance<=300) {

for(int pos=0;pos<=360;pos=pos+1){

myServo.write(pos);

Serial.println(pos);

}

}

else if(distance>300){

for(int pos=360;pos>=0;pos=pos-1){

myServo.write(pos);

Serial.println(pos);

}

}

}