**PSRAJA SMART HOME:**

**WOKWI LINK:** <https://wokwi.com/projects/364445697861243905>

**CODE (sketch.ino):**

#include<Servo.h>

intconst LDR = A0;

long readUltrasonicDistance(int triggerPin, int echoPin)

{

  pinMode(triggerPin, OUTPUT);  // Clear the trigger

  digitalWrite(triggerPin, LOW);

  delayMicroseconds(2);

  // Sets the trigger pin to HIGH state for 10 microseconds

  digitalWrite(triggerPin, HIGH);

  delayMicroseconds(10);

  digitalWrite(triggerPin, LOW);

  pinMode(echoPin, INPUT);

  // Reads the echo pin, and returns the sound wave travel time in microseconds

  returnpulseIn(echoPin, HIGH);

}

Servo servo\_7;

voidsetup()

{

**Serial**.begin(9600);   //initialize serial communication

  pinMode(LDR, INPUT);    //LDR

  pinMode(13, OUTPUT);    //connected to led

  servo\_7.attach(4, 500, 2500); //servo motor

  pinMode(5, OUTPUT);       //signal to piezo buzzer

}

voidloop()

{

  int senValue = 0;

  //------light intensity control------//

  //--------------------------------------------------------------

  int val1 = analogRead(LDR);

  if(val1 <500)

  {

    digitalWrite(13, LOW);

**Serial**.print("Bulb OFF = ");

**Serial**.print(val1);

  }

else

  {

    digitalWrite(13, HIGH);

**Serial**.print("Bulb ON = ");

**Serial**.print(val1);

  }

//Servo motor control

  senValue = 0.01723 \* readUltrasonicDistance(2, 3);

  if (senValue <70)

  {

    servo\_7.write(90);

    tone(5, 650);

**Serial**.print("    || Door Open!");

**Serial**.print(senValue);

**Serial**.print("\n");

  }

  else

  {

    servo\_7.write(0);

    noTone(5);

**Serial**.print("    || Door Closed!");

**Serial**.print(senValue);

**Serial**.print("\n");

  }

  delay(10); // Delay a little bit to improve simulation performance

}

**CODE(DIAGRAM.JSON):**

{

  "version": 1,

  "author": "20\_ECE\_80\_Shanmuga raja P",

  "editor": "wokwi",

  "parts": [

    {

      "type": "wokwi-arduino-uno",

      "id": "uno",

      "top": 10,

      "left": -60.66,

      "rotate": 90,

      "attrs": {}

    },

    {

      "type": "wokwi-led",

      "id": "led1",

      "top": -54.13,

      "left": 215.54,

      "attrs": { "color": "red" }

    },

    {

      "type": "wokwi-resistor",

      "id": "r1",

      "top": -10.18,

      "left": 276.4,

      "rotate": 180,

      "attrs": { "value": "1000" }

    },

    {

      "type": "wokwi-photoresistor-sensor",

      "id": "ldr1",

      "top": 25.21,

      "left": 360.94,

      "rotate": 90,

      "attrs": {}

    },

    {

      "type": "wokwi-hc-sr04",

      "id": "ultrasonic1",

      "top": 200.7,

      "left": 364.7,

      "rotate": 180,

      "attrs": { "distance": "392" }

    },

    { "type": "wokwi-servo", "id": "servo1", "top": 102.54, "left": 626.54, "attrs": {} },

    {

      "type": "wokwi-buzzer",

      "id": "bz1",

      "top": -94.67,

      "left": 613.67,

      "attrs": { "volume": "0.1" }

    }

  ],

  "connections": [

    [ "led1:C", "uno:GND.1", "green", [ "v103.5", "h-64.21" ] ],

    [ "ldr1:AO", "uno:A0", "green", [ "v23.66", "h-183.61", "v127.33", "h-306", "v-104.67" ] ],

    [ "ldr1:GND", "uno:GND.2", "black", [ "v42.32", "h-254.44", "v137.33", "h-282", "v-176" ] ],

    [ "ldr1:VCC", "ultrasonic1:VCC", "red", [ "v60.32", "h0.23" ] ],

    [ "servo1:V+", "ultrasonic1:VCC", "green", [ "h-138.87", "v23.33" ] ],

    [ "bz1:1", "servo1:GND", "green", [ "v159.37", "h-14.34" ] ],

    [

      "servo1:GND",

      "ultrasonic1:GND",

      "black",

      [ "h-152.87", "v27.49", "h-0.67", "v16", "h-38.67" ]

    ],

    [ "bz1:2", "uno:5", "green", [ "v11.37", "h-465.67", "v182.67" ] ],

    [ "uno:4", "servo1:PWM", "green", [ "h0" ] ],

    [ "uno:3", "ldr1:DO", "green", [ "h158.16", "v-59.47" ] ],

    [ "ldr1:DO", "ultrasonic1:ECHO", "green", [ "v60.32", "h-1.97" ] ],

    [ "uno:2", "ldr1:GND", "green", [ "h252.16", "v-41.63" ] ],

    [ "ldr1:GND", "ultrasonic1:TRIG", "black", [ "v0" ] ],

    [ "uno:5V", "ldr1:VCC", "red", [ "h311.99", "v26.87" ] ],

    [ "led1:A", "r1:2", "green", [ "v4.16", "h32.46" ] ],

    [ "r1:1", "uno:13", "green", [ "v104.86", "h-162.4" ] ]

  ],

  "dependencies": {}

}

**CIRCUIT DIAGRAM:**

