

IOT Assignment 1

Topic : Smart Home in Thinker CAD using 2+ sensors, Led and Buzzer in Single code.

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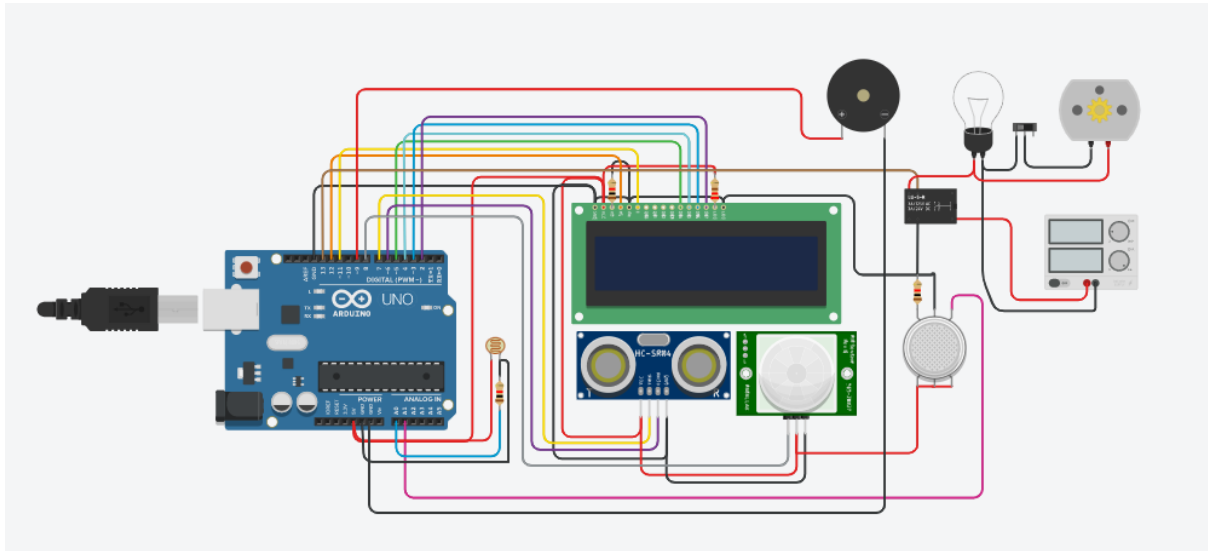


Fig: Smart Home Simulation Design

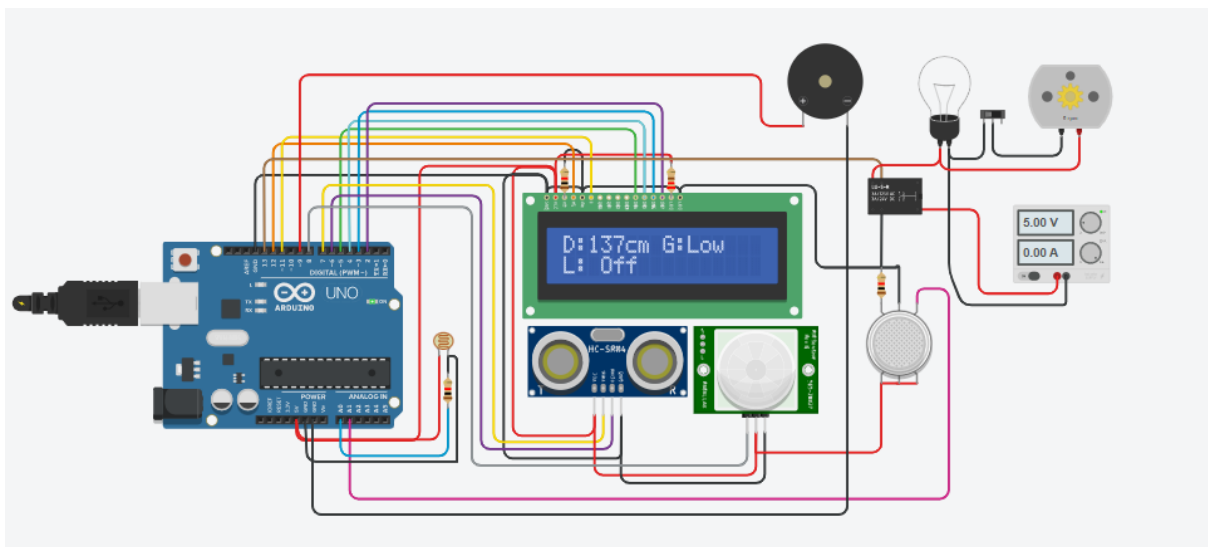


Fig: Smart Home Simulation Design Output

Code:

```
#include <LiquidCrystal.h>

LiquidCrystal lcd(12, 11, 5, 4, 3, 2);

int distanceThreshold = 0;

int cm = 0;

int inches = 0;

int buzzer=9;

int releNO = 13;

int inputPir = 8;

int val = 0;

int resuldoSensorLDR;

int sensorLDR = A0;


int const PINO_SGAS = A1;

long readUltrasonicDistance(int triggerPin, int echoPin)
{
    pinMode(triggerPin, OUTPUT);
    digitalWrite(triggerPin, LOW);
    delayMicroseconds(2);
    digitalWrite(triggerPin, HIGH);
    delayMicroseconds(10);
    digitalWrite(triggerPin, LOW);
    pinMode(echoPin, INPUT);
    return pulseIn(echoPin, HIGH);
}

void setup() {
    lcd.begin(16, 2);
    pinMode(releNO, OUTPUT);
    pinMode(inputPir, INPUT);
    pinMode(sensorLDR, INPUT);
    Serial.begin(9600);
```

```
}
```

```
void loop() {
```

```
    distanceThreshold = 350;
```

```
    cm = 0.01723 * readUltrasonicDistance(7, 6);
```

```
    inches = (cm / 2.54);
```

```
    lcd.setCursor(0,0);
```

```
    lcd.print("D:");
```

```
    lcd.print(cm);
```

```
    lcd.print("cm");
```

```
    delay(10);
```

```
    pinMode(buzzer, OUTPUT);
```

```
    if(buzzer >= 15 && buzzer <= 30)
```

```
    {
```

```
        digitalWrite(buzzer, HIGH);
```

```
        delay(2000);
```

```
    }
```

```
    else
```

```
    {
```

```
        digitalWrite(buzzer, LOW);
```

```
        delay(2000);
```

```
    }
```

```
    val = digitalRead(inputPir);
```

```
    resuldoSensorLDR = analogRead(sensorLDR);
```

```
    if(resuldoSensorLDR<600)
```

```
    {
```

```
        if(val == HIGH)
```

```
        {
```

```
            digitalWrite(releNO, HIGH);
```

```
            lcd.setCursor(0,1);
```

```

lcd.print("L: On ");
    delay(5000);
}

else{
    digitalWrite(releNO, LOW);lcd.setCursor(0,1);
lcd.print("L: Off");
    delay(300);
}
}

else{ digitalWrite (releNO, LOW);
Serial.println(resuldoSensorLDR);
delay(500);
}

int color = analogRead(PINO_SGAS);
lcd.setCursor(8,0);
//lcd.print("");
if(color <= 85){
    lcd.print("G:Low ");
} else if(color <= 120){
    lcd.print("G:Med ");
} else if(color <= 200){
    lcd.print("G:High");
} else if(color <= 300){
    lcd.print("G:Ext ");
}

delay(250);
}

```