**Assignment -1**

Simple Home Automation

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| Assignment Date | 20 September 2022 |
| Student Name | Manibalan A |
| Student Roll Number | 2019504035 |
| Maximum Marks | 2 Marks |

**Question:**

Design and Program a simple Home automation circuit using Arduino Uno board along with a Buzzer, LED, switch.

**Solution:**

int sensorValue = 0;

int greenled = 6;

int redled = 8;

int buzzer\_pin = 11;

int sen1Value = 0;

int A;

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()

{

Serial.begin (9600);

pinMode(11, OUTPUT);

pinMode(6, OUTPUT);

pinMode(8, OUTPUT);

pinMode(4, INPUT);

pinMode(12, OUTPUT);

pinMode(13, OUTPUT);

pinMode(A1, INPUT);

}

void loop()

{

//-----Gas Sensor-----//

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

int sensorValue = analogRead(A0);

Serial.println(sensorValue);

if(sensorValue > 100)

{

digitalWrite (buzzer\_pin, HIGH);

digitalWrite (redled, HIGH);

}

else

{

digitalWrite (buzzer\_pin, LOW);

digitalWrite (redled, LOW);

}

delay(1000);

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

//---------UltrasonicDistance----------//

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

sen1Value = 0.01723\*readUltrasonicDistance(3,2);

if(sen1Value<10)

{

Serial.print(" ||Door Open! ; Distance = ");

Serial.print(sen1Value);

digitalWrite (buzzer\_pin, HIGH);

digitalWrite (greenled, HIGH);

}

else

{

Serial.print(" ||Door Closed! ; Distance = ");

Serial.print(sen1Value);

digitalWrite (buzzer\_pin, LOW);

digitalWrite (greenled, LOW);

}

delay(1000);

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

//-------------PIR sensor-----------------//

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

if (digitalRead(4)==1)

{

digitalWrite(12,HIGH);

delay(1000);

}

else

{

digitalWrite(12,LOW);

delay(100);

}

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

//--------------Temp Sensor-----------------//

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

A = analogRead(A1);

Serial.println(A);

delay(1000);

if(A >= 180)

{

digitalWrite(13, 1);

}

else

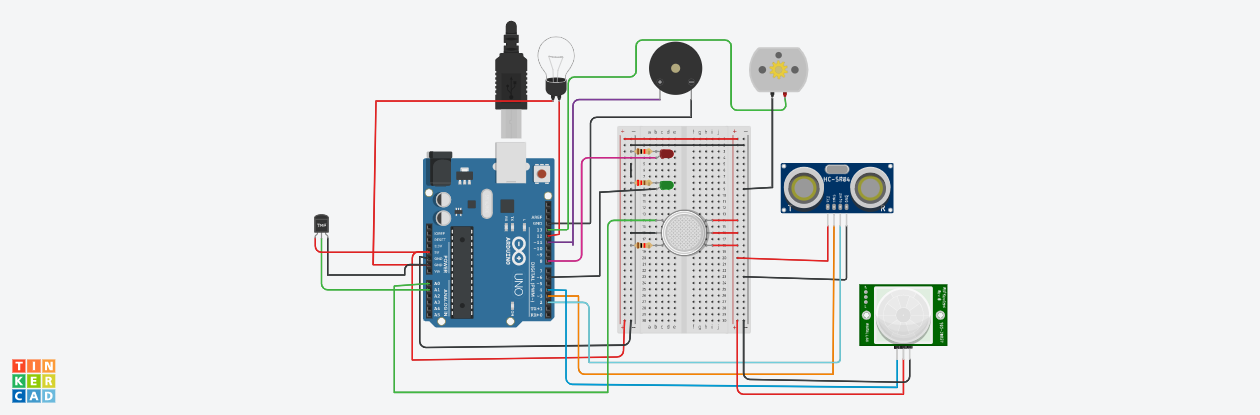
{

digitalWrite(13, 0);

}

}

**Circuit:**

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