ASSIGNMENT-1

Smart Home Automation Using Sensors

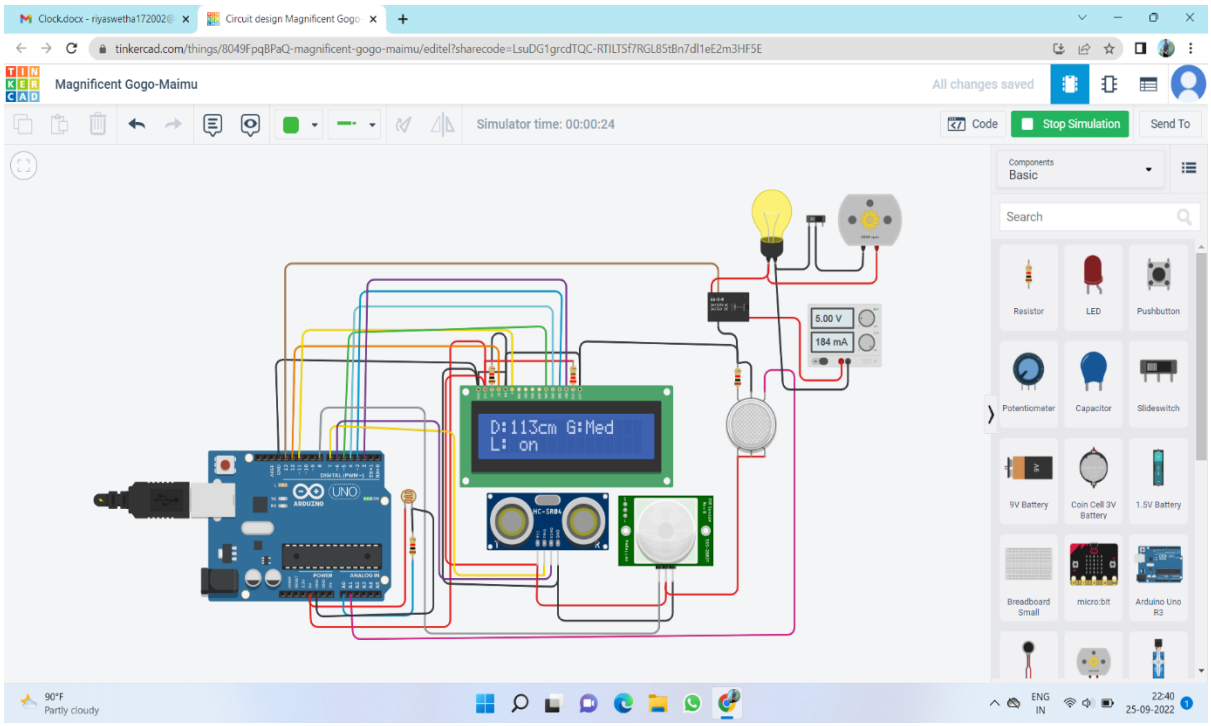
```
#include <LiquidCrystal.h>
LiquidCrystal lcd(12,11,5,4,3,2);
int distanceThreshold = 0;
int cm = 0;
int inches = 0;

int releNO = 13;
int inputpir = 0;
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);
```

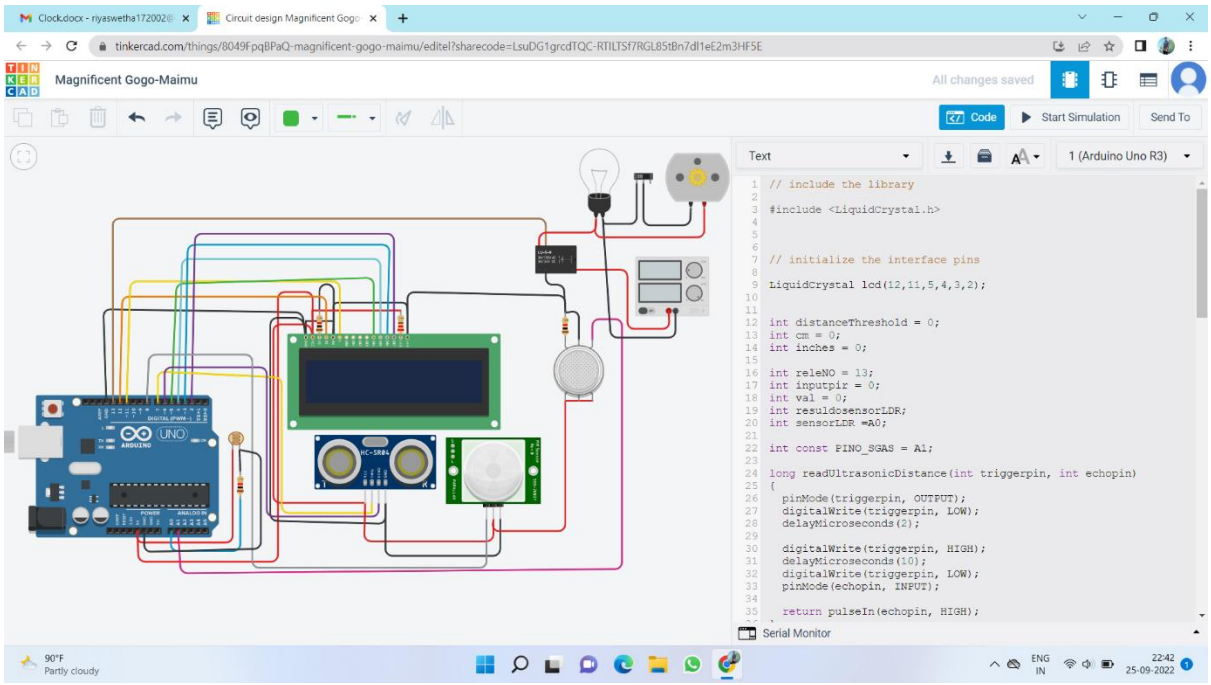
```
  pinMode(echopin, INPUT);

  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);
```

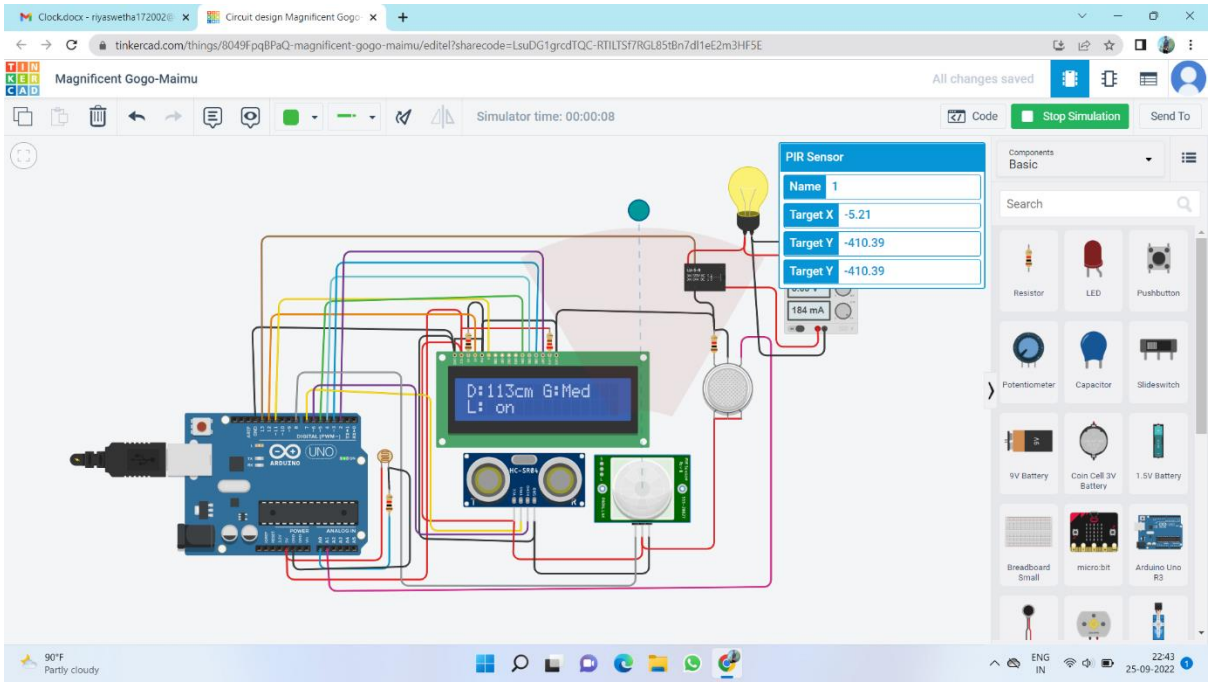
```
val = digitalRead(inputpir);
resuldosensorLDR = analogRead(sensorLDR);
if(resuldosensorLDR<600)
{
  if(val == HIGH)
  {
    digitalWrite(releNO, HIGH);
    lcd.setCursor(0,1);
 lcd.print("L: on");
    delay(5000);
  }
  else
  {
   digitalWrite(releNO, LOW);
   lcd.setCursor(0,1);
lcd.print("L: off");
   delay(300);
 }
}
  else
  {
    digitalWrite(releNO, LOW);
    Serial.println(resuldosensorLDR);
    delay(500);
  }

 int color = analogRead(PINO_SGAS);

lcd.setCursor(8,0);
```

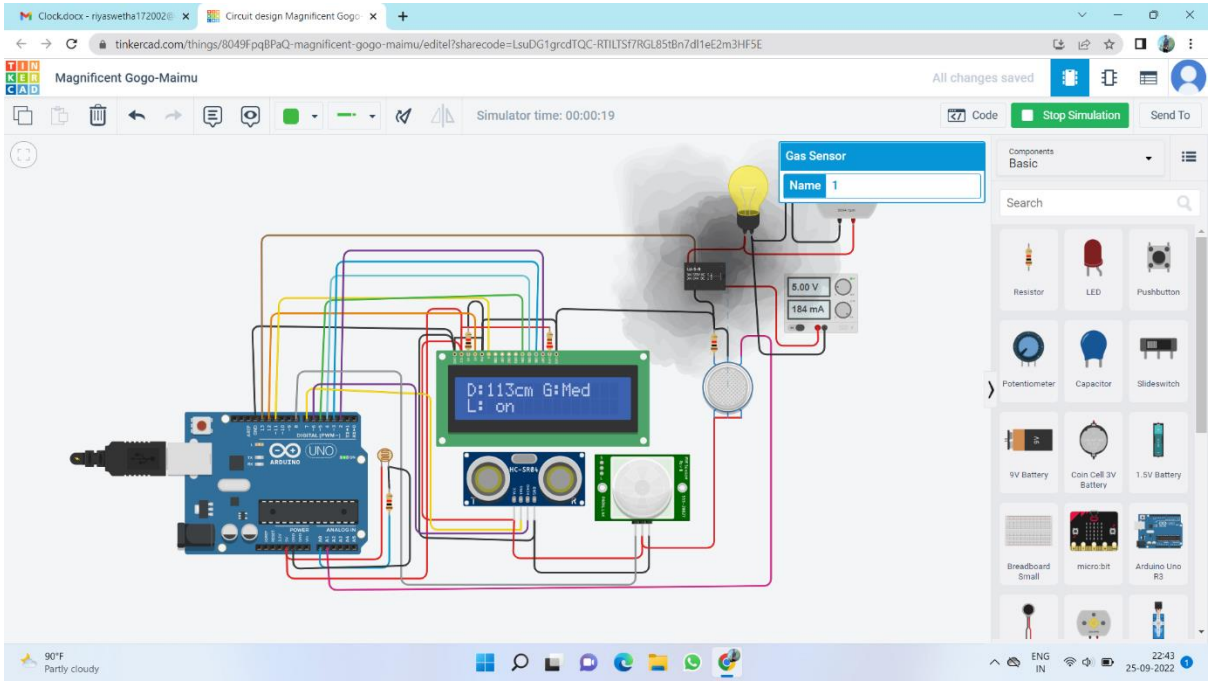
```
 if(color <= 85){
   lcd.print("G:Low ");
 } else if(color <= 120){
   lcd.print("G:Med ");
 } else if(color <= 200){
   lcd.print("G:High");
 } else if(color <= 300){
   lcd.print("G:Ext ");


 }


 delay(250);
}
```

OUTPUT :




Clock.docx - riyaswetha172002@
Circuit design Magnificent Gogo
tinkercad.com/things/8049FpqBPaQ-magnificent-gogo-maimu/editel?sharecode=LsuDG1grcdTQC-RTILTSf7RGL85tBn7dl1eE2m3HF5E
Magnificent Gogo-Maimu
All changes saved
Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
// include the library
#include <LiquidCrystal.h>
// initialize the interface pins
LiquidCrystal lcd(12,11,5,4,3,2);
int distanceThreshold = 0;
int cm = 0;
int inches = 0;
int releNO = 13;
int inputpir = 0;
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);
Serial Monitor
90°F
Partly cloudy
ENG
IN
22:42
25-09-2022


Clock.docx - riyaswetha172002@
Circuit design Magnificent Gogo
tinkercad.com/things/8049FpqBPaQ-magnificent-gogo-maimu/editel?sharecode=LsuDG1grcdTQC-RTILTSf7RGL85tBn7dl1eE2m3HF5E
Magnificent Gogo-Maimu
All changes saved
Simulator time: 00:00:08
Code
Stop Simulation
Send To
PIR Sensor
Name 1
Target X -5.21
Target Y -410.39
Target Y -410.39
184 mA
D:113cm G:Med
L: on
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
9V Battery
Coin Cell 3V Battery
1.5V Battery
Breadboard Small
micro:bit
Arduino Uno R3
90°F
Partly cloudy
ENG
IN
22:43
25-09-2022


Clock.docx - riyaswetha172002@
Circuit design Magnificent Gogo
tinkercad.com/things/8049FpqBPaQ-magnificent-gogo-maimu/editel?sharecode=LsuDG1grcdTQC-RTILTSf7RGL85tBn7dl1eE2m3HF5E
Magnificent Gogo-Maimu
All changes saved
Simulator time: 00:00:19
Code
Stop Simulation
Send To
Gas Sensor
Name 1
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
9V Battery
Coin Cell 3V Battery
1.5V Battery
Breadboard Small
micro:bit
Arduino Uno R3
5.00 V
184 mA
D:113cm G:Med
L: on
90°F
Partly cloudy
ENG
IN
22:43
25-09-2022