ASSIGNMENT-1

SMART HOME AUTOMATION USING SENSORS

```
#include <Servo.h>


int output1value = 0;

int sen1value = 0;

int sen2value = 0;

int const gas sensor = 0;

int const LOR = A0;

int limit = 400;


long readU1trasonicDistance(int triggerPin, int echoPin)

{

  pinMode(triggerpin, OUTPUT);

  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 return the sound wave travel time is
  return pulsein(echopin, HIGH);
}
digitalWrite(triggerpin, HIGH);
  delaymicroseconds(10);
  digitalWrite(triggerpin, LOW);
  pinMode(echopin, INPUT);
// 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 return the sound wave travel time is
  return pulsein(echopin, HIGH);
}


Servo servo_7;


void setup()
{
  serial.begin(9600);        //initialazevserial communication
  pinMode(A0, INPUT);       v//LDR
```

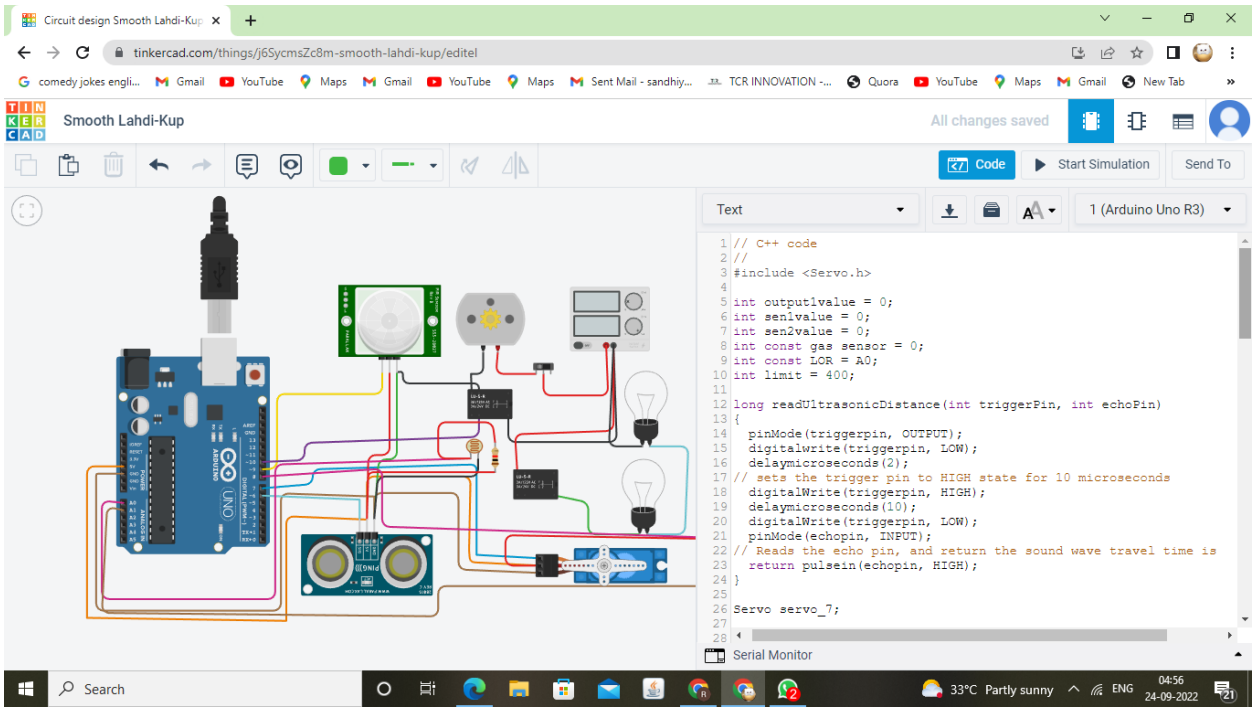
```
  pinMode(A1, INPUT);         //gas sensor
  pinMode(13, OUTPUT);        //connected to relay


  pinMode(8, OUTPUT);         //signal to piezo buzzer
  pinMode(9, INPUT);         v// signal to PIR
  pinMode(10, OUTPUT);        //signal to npn as switch
  pinMode(4, OUTPUT);         //red LED
  pinMode(3, OUTPUT);         //Green LED


}


void loop()
{
    //--------light intensity control----------//
  //-------------------------------------------------------
    int vall = analogRead(LDR);
  if (vall > 500)
    {
       digitalWrite(13, LOW);
   serial.print("Bulb ON = ");
   serial.print(vall);
   }
```

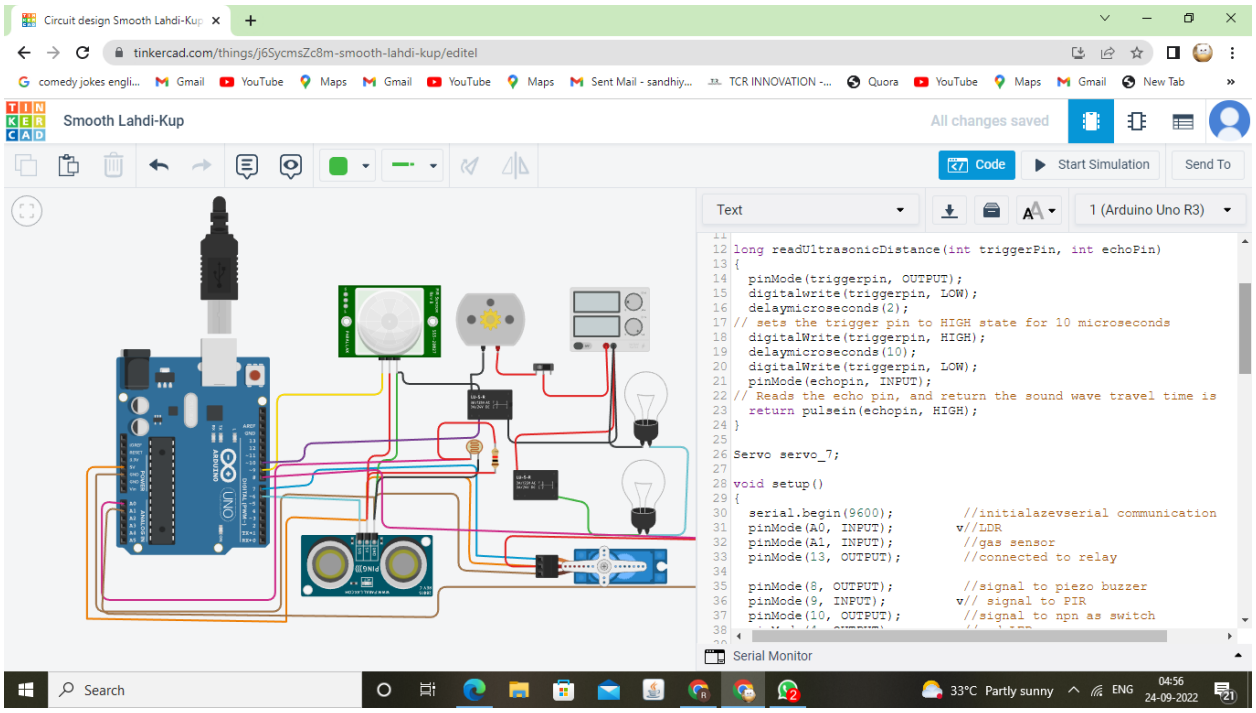
```
else
 {
    digitalWriter(13, HIGH);
 serial.print("Bulb OFF = ");
 serial.print(vall);
 }

//-------------------------------------------------------
       //-------light & fan control--------//
//-------------------------------------------------------
sen2value = digitalRead(9);
if (sen2value == 0)
 {
     digitalWrite(10, LOW);  //NPN as switch OFF
     digitalWrite(4, HIGH);  //Red LED ON,indicating no motor
     digitalWrite(3, LOW);   //Green LED OFF, since no motion
 Serial.print("        ||NO Motion Dedected    ");
 }


if (sen2value == 1)
 {
```

```
      digitalWrite(10, HIGH); //NPN as switch ON
  delay(5000);
      digitalWrite(4, LOW);   //RED LED OFF
      digitalWrite(3, HIGH);  //GREEN LED ON . indicating motion
   serial.print(" .   ||Motion Detected|
            }

//-------------------------------------------------------
          //--------Gas sensor---------//
//-------------------------------------------------------------------
int val = anologRead(gas_sensor);    //read sensor valid
 serial.print("|| Gas Sensor value = ");
 serial.print(val);       //printing in serial monitor
//val = map(val, 300, 750, 0, 100);
 if (val > limit)
   {
      tone(8, 150);
   }
   delay(300);
   notone(8);
//-----------------------------------------------------
        //-------- servo motor ---------//
```

```
//-----------------------------------------------------------
 sen1value = 0.01723 . readU1trasonicDistance(6, 6);


 if (sen1value < 100)
   {
      servo_7.Write(90){
   serial.print("    || Door open  ;  Distance = ");
   serial.print(sen1value);
   serial.print("/n");
   }
```

OUTPUT




Circuit design Smooth Lahdi-Kup
tinkercad.com/things/j6SycmsZc8m-smooth-lahdi-kup/editel
Smooth Lahdi-Kup
All changes saved
Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
long readUltrasonicDistance(int triggerPin, int echoPin)
{
pinMode(triggerpin, OUTPUT);
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 return the sound wave travel time is
return pulsein(echopin, HIGH);
}
Servo servo_7;
void setup()
{
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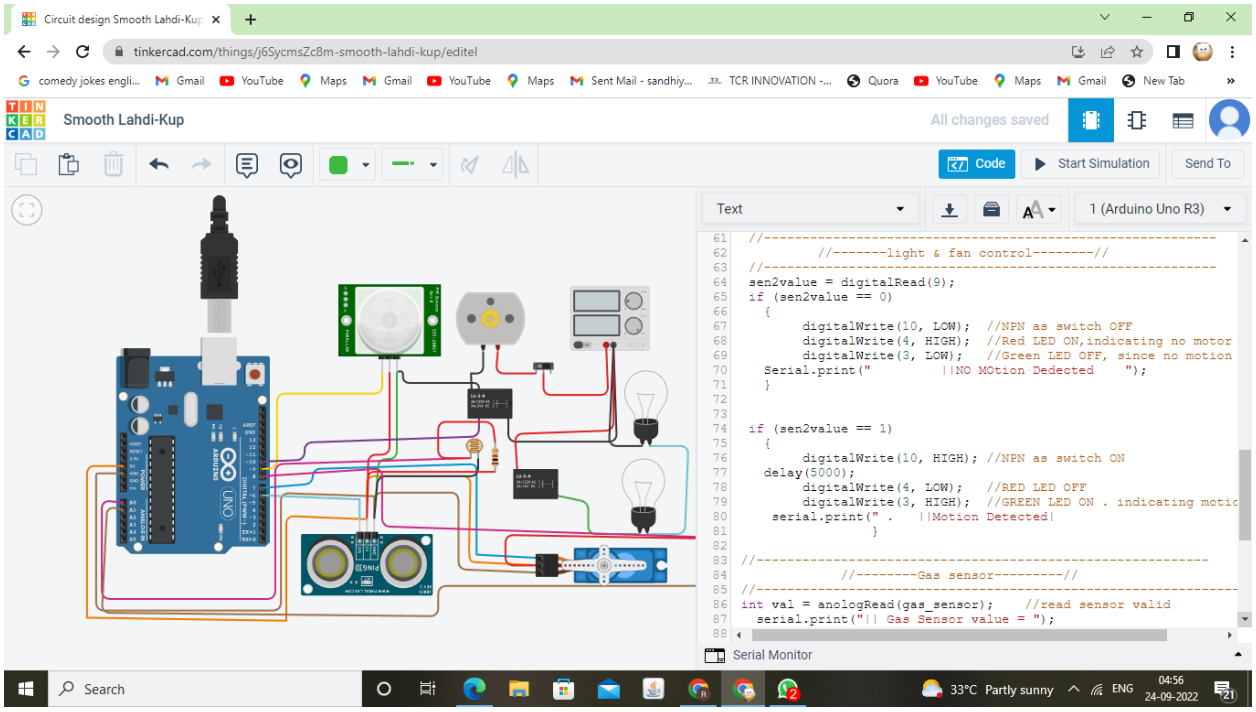
pinMode(9, INPUT); v// signal to PIR
pinMode(10, OUTPUT); //signal to npn as switch
Serial Monitor
Search
33°C Partly sunny
ENG
04:56
24-09-2022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//---
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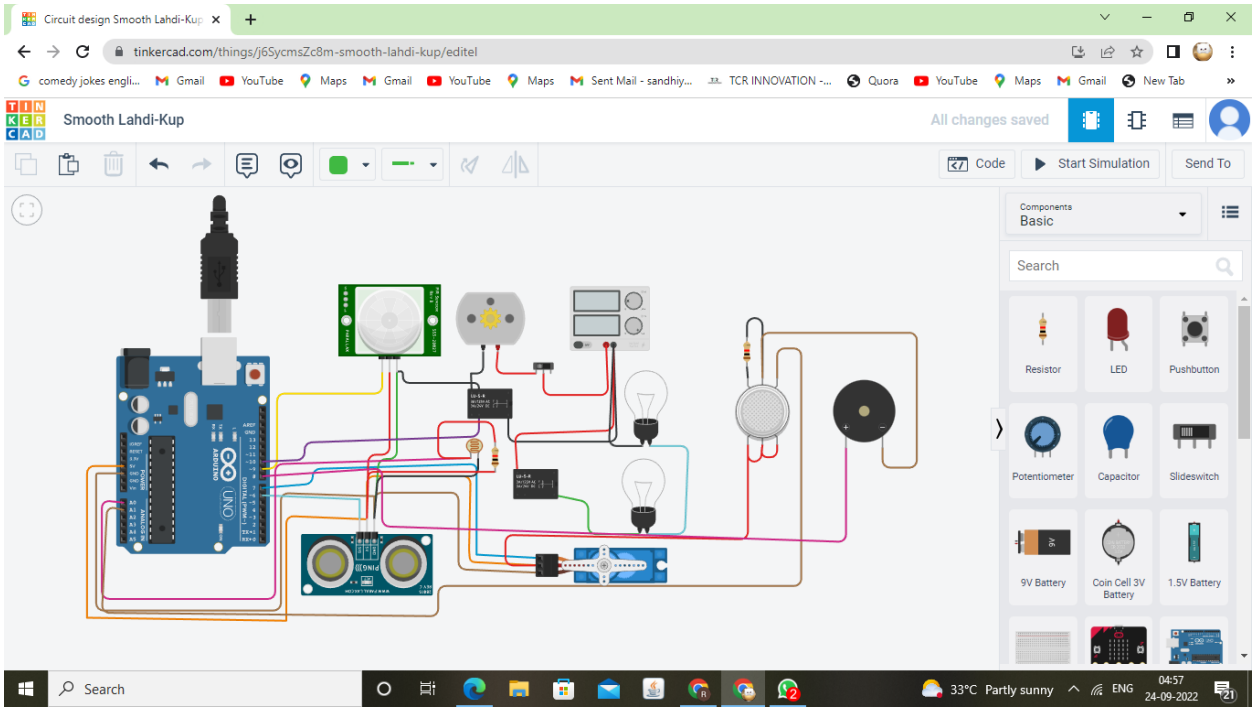
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LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
9V Battery
Coin Cell 3V Battery
1.5V Battery
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