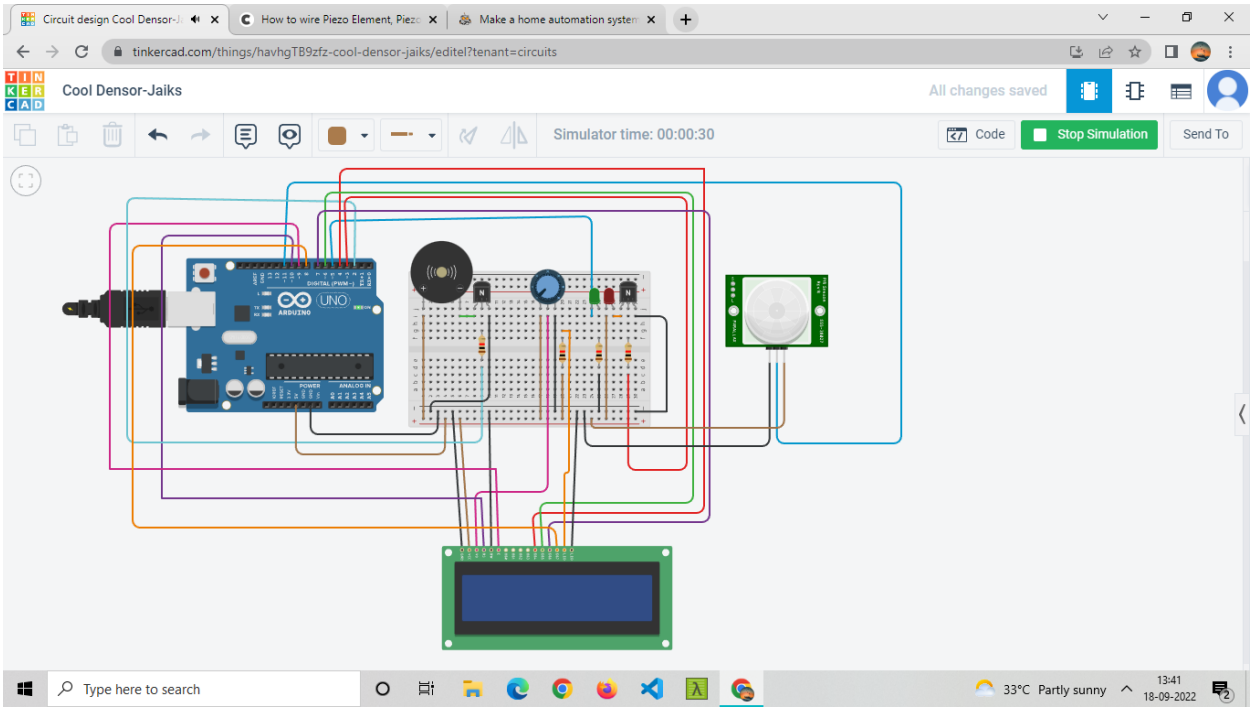
Assignment-1

Home Automation



Program

```
#include <LiquidCrystal.h>
int ledPin = 13;
int inputPin = 7;
int pirState = LOW;
int val = 0;
int pinSpeaker = 10;
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
void setup()
{
  pinMode(ledPin, OUTPUT);
  pinMode(inputPin, INPUT);
  pinMode(pinSpeaker, OUTPUT);
  Serial.begin(9600);
```

```
 lcd.begin(16, 2);
 lcd.setCursor(2, 0);
 lcd.print("P.I.R Motion");
 lcd.setCursor(5, 1);
 lcd.print("Sensor");
 delay(4000);
 lcd.clear();
 lcd.setCursor(2, 0);
 lcd.print("Developed By");
 lcd.setCursor(2, 1);
 lcd.print("rees52");
delay(5000);
 lcd.clear();
 lcd.setCursor(0, 0);
 lcd.print("Processing Data.");
 delay(3000);
 lcd.clear();
 lcd.setCursor(3, 0);
 lcd.print("Waiting For");
  lcd.setCursor(3, 1);
  lcd.print("Motion....");
}
void loop()
{
  val = digitalRead(inputPin);
   if (val == HIGH) {
   digitalWrite(ledPin, HIGH);
   playTone(300, 300);
   delay(150);
   if (pirState == LOW) {
         Serial.println("Motion detected!");
     lcd.clear() ;
```

```
      lcd.setCursor(0, 0);
      lcd.print("Motion Detected!");
      pirState = HIGH;
    }
  }
else
{
      digitalWrite(ledPin, LOW);
      playTone(0, 0);
      delay(300);
      if (pirState == HIGH)
   {
      Serial.println("Motion ended!");
      lcd.clear() ;
      lcd.setCursor(3, 0);
      lcd.print("Waiting For");
      lcd.setCursor(3, 1);
      lcd.print("Motion....");
      pirState = LOW;
    }
  }
}
void playTone(long duration, int freq)
{
    duration *= 1000;
    int period = (1.0 / freq) * 100000;
    long elapsed_time = 0;
    while (elapsed_time < duration)
   {
    digitalWrite(pinSpeaker,HIGH);
    delayMicroseconds(period / 2);
    digitalWrite(pinSpeaker, LOW);
```

```
    delayMicroseconds(period / 2);
    elapsed_time += (period);
    }
}
```