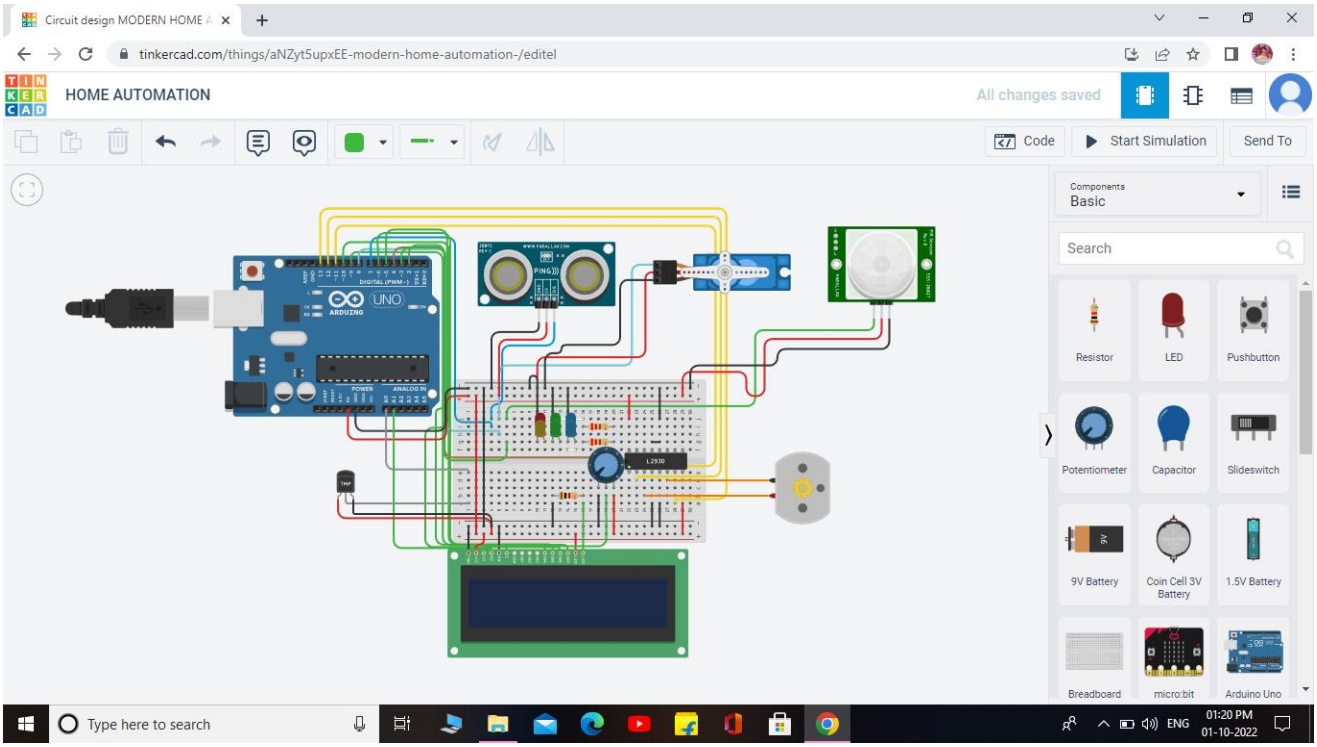
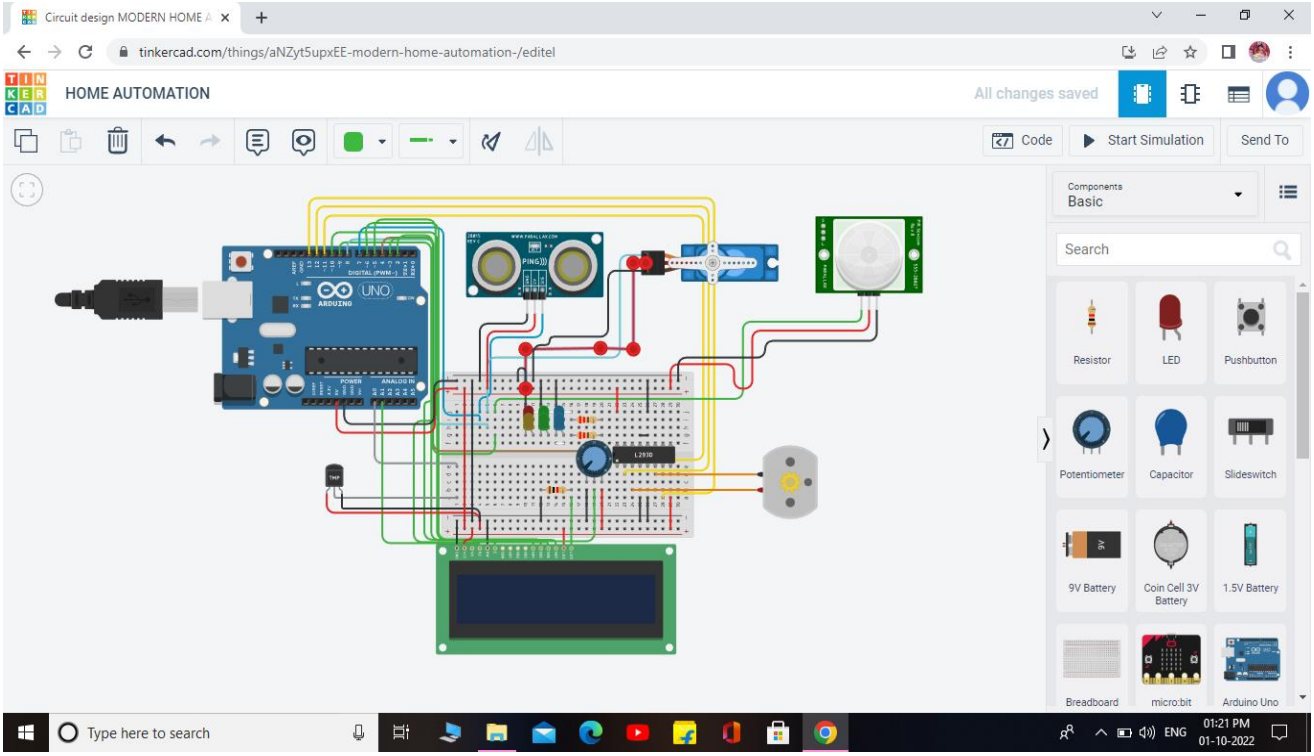
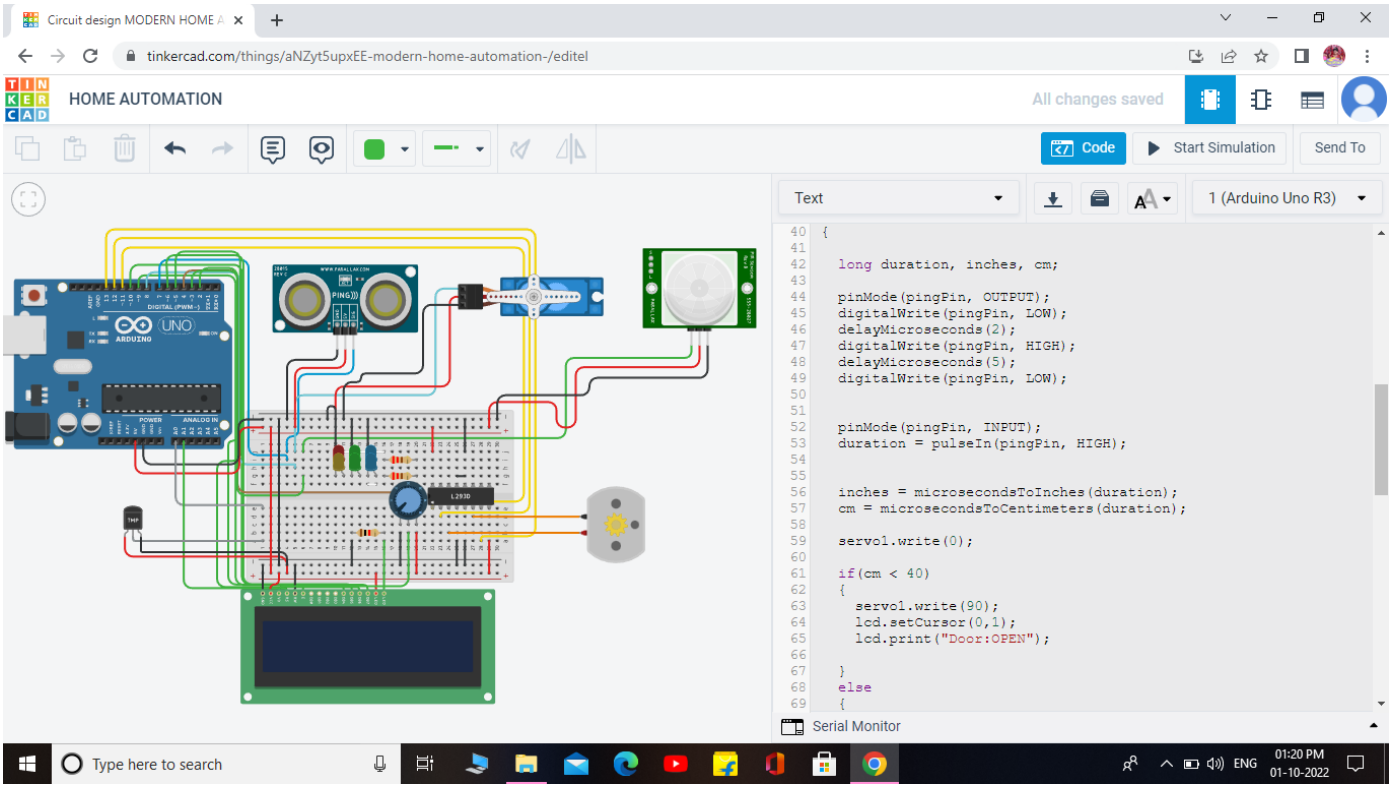
ASSIGNMENT 1: SMART HOME AUTOMATION USING TINKERCAD



USING TINKERCAD CONNECTING THE CIRCUIT



INSERTING THE CODE



PROGRAM CODE :

```
#include<Servo.h>
#include<LiquidCrystal.h>
LiquidCrystal lcd(A1,10,9,6,5,3);
float value;
int tmp = A0;
const int pingPin = 7;
int servoPin = 8;

Servo servo1;
void setup()
{
  Serial.begin(9600);
  servo1.attach(servoPin);
  lcd.begin(16, 2);
  pinMode(2,INPUT);
```

```
pinMode(4,OUTPUT);
pinMode(11,OUTPUT);
//pinMode(10,INPUT);
//pinMode(2,OUTPUT);
//pinMode(8,OUTPUT);
//pinMode(9,OUTPUT);
//pinMode(11,OUTPUT);
//pinMode(13,OUTPUT);
//pinMode(14,OUTPUT);

pinMode(12,OUTPUT);
pinMode(13,OUTPUT);
pinMode(A0,INPUT);
digitalWrite(2,LOW);
digitalWrite(11,HIGH);
//digitalWrite(5,OUTPUT);
digitalWrite(3,OUTPUT);
```

```
  digitalWrite(7,OUTPUT);
  digitalWrite(11,OUTPUT);
  digitalWrite(13,OUTPUT);
  //digitalWrite(A0,OUTPUT);
}

void loop()
{

  long duration, inches, cm;

  pinMode(pingPin, OUTPUT);
  digitalWrite(pingPin, LOW);
  delayMicroseconds(2);
  digitalWrite(pingPin, HIGH);
  delayMicroseconds(5);
  digitalWrite(pingPin, LOW);
```

```
pinMode(pingPin, INPUT);
duration = pulseIn(pingPin, HIGH);


inches = microsecondsToInches(duration);
cm = microsecondsToCentimeters(duration);

servo1.write(0);

if(cm < 40)
{
  servo1.write(90);
  lcd.setCursor(0,1);
  lcd.print("Door:OPEN");

}
else
{
  servo1.write(0);
```

```
lcd.setCursor(0,1);
    lcd.print("Door:CLOSED");

  }


  int pir = digitalRead(2);

  if(pir == HIGH)
  {
    digitalWrite(4,HIGH);
    lcd.setCursor(10,0);
    lcd.print("LED:ON");
   // delay(500);
  }
  else if(pir == LOW)
     lcd.setCursor(12,0);
    lcd.print("OFF");
```

```
  {
    digitalWrite(4,LOW);
  }

value = analogRead(tmp)*0.004882814;
  value = (value - 0.5) * 100.0;
  lcd.setCursor(0,0);
lcd.print("Tmp:");
      lcd.print(value);
      delay(1000);


  Serial.println("temperature");
  Serial.println(value);

  if(value > 20)
  {
    digitalWrite(12,HIGH);
```

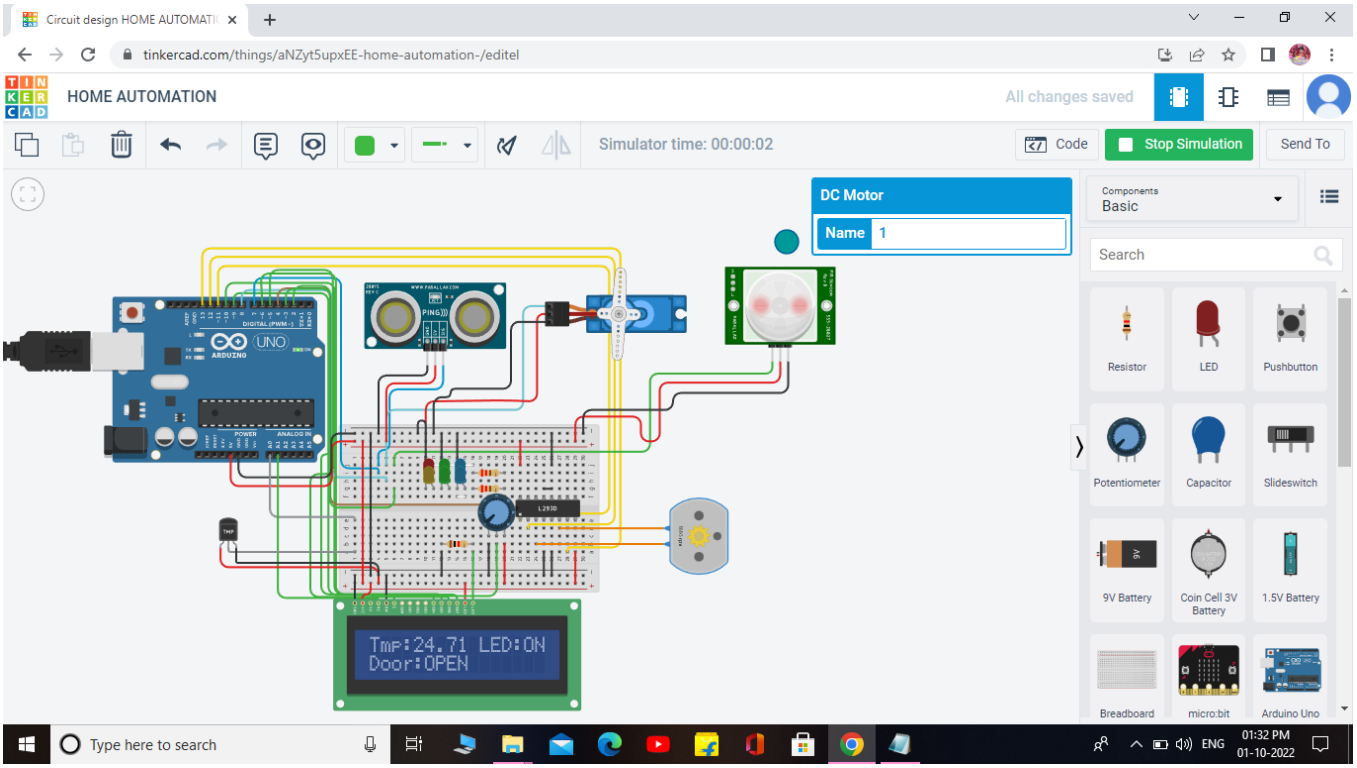
```
  digitalWrite(13,LOW);
  }
  else
  {
    digitalWrite(12,LOW);
    digitalWrite(13,LOW);
  }
  lcd.clear();
}

long microsecondsToInches(long microseconds)
{
  return microseconds / 74 / 2;
}

long microsecondsToCentimeters(long
microseconds) {
return microseconds / 29 / 2;
```

}

OUTPUT:


Circuit design HOME AUTOMATI
tinkercad.com/things/aNZyt5upxEE-home-automation-/editel
HOME AUTOMATION
All changes saved
Simulator time: 00:00:02
Code
Stop Simulation
Send To
DC Motor
Name 1
Components
Basic
Search
Resistor
LED
Pushbutton
Potentiometer
Capacitor
Slideswitch
9V Battery
Coin Cell 3V Battery
1.5V Battery
Breadboard
micro:bit
Arduino Uno
Tmp:24.71 LED:ON
Door:OPEN
Type here to search
ENG
01:32 PM
01-10-2022