Assignment -1

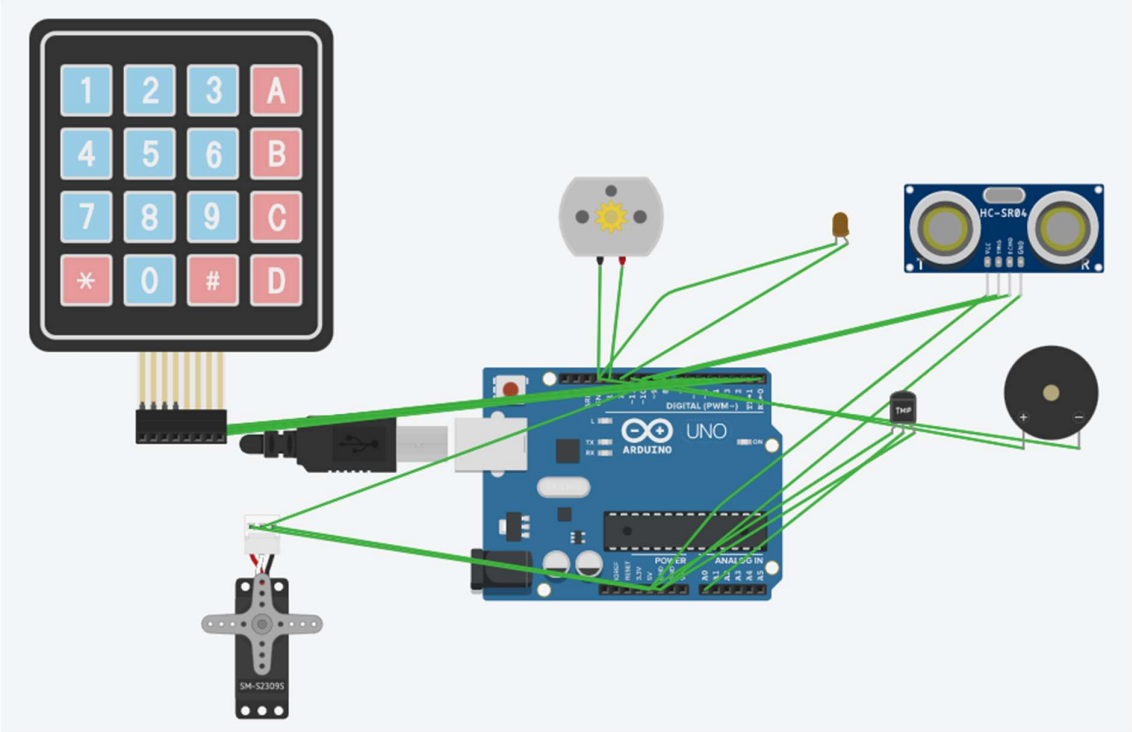
Home Automation

Assignment Date	8 September 2022
Student Name	R.V.Rohinth Ram
Student Roll Number	2019504571
Maximum Marks	2 Marks

Question-1:

Home automation using TinkerCad

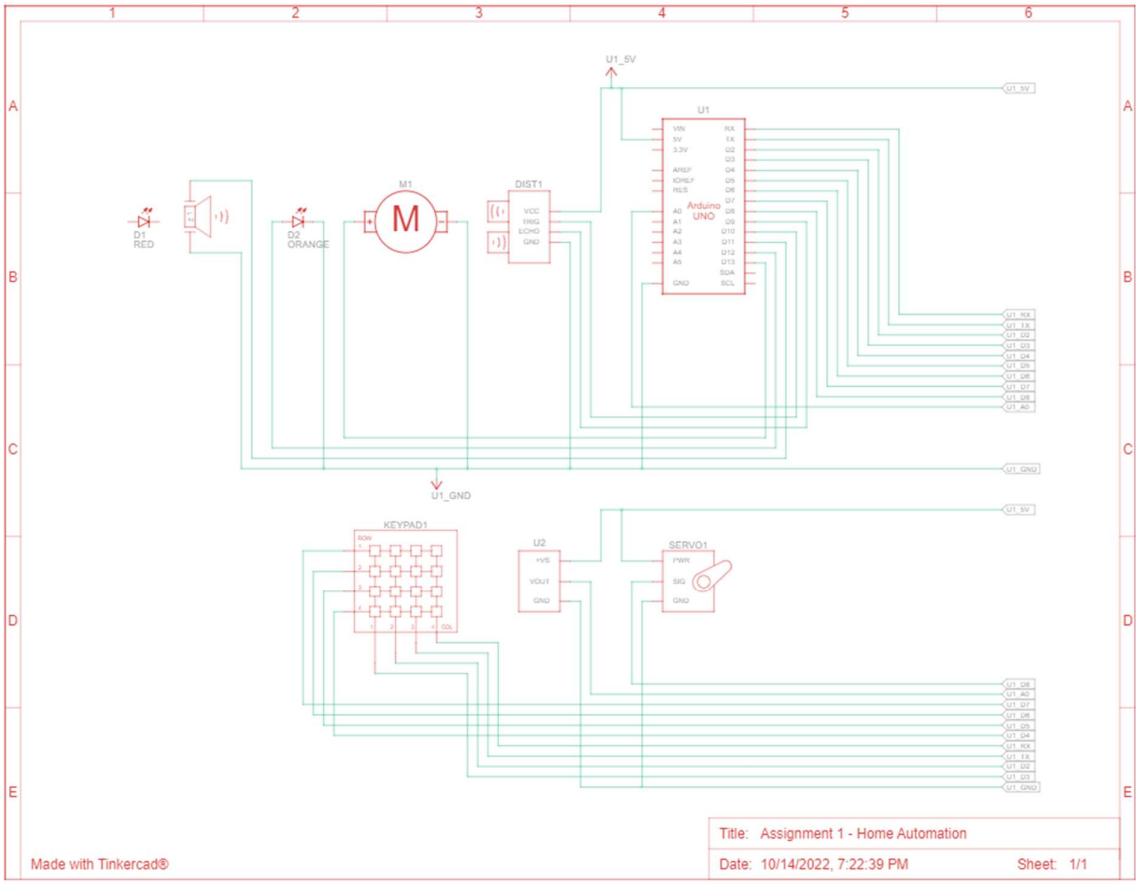
Design



Components Required

Name	Quantity	Component
U1	1	Arduino Uno R3
SERVO1	1	Micro Servo
U2	1	Temperature Sensor [TMP36]
M1	1	DC Motor
D1	1	Red LED
D2	1	Orange LED
DIST1	1	Ultrasonic Distance Sensor
PIEZO2	1	Piezo
KEYPAD1	1	Keypad 4x4

Schematic



Arduino Code

```
#include <Keypad.h>
#include<Servo.h>

const byte ROWS = 4;
const byte COLS = 4;

char hexaKeys[ROWS][COLS] = {
  {'1','2','3','A'},
  {'4','5','6','B'},
  {'7','8','9','C'},
  {'*','0','#','D'}
};

byte rowPins[ROWS] = {11, 10, 9, 8};
byte colPins[COLS] = {7, 6, 5, 4};

Keypad customKeypad = Keypad( makeKeymap(hexaKeys), rowPins, colPins, ROWS, COLS);
```

```
Servo inGate;

void setup()
{
 Serial.begin(9600);
 inGate.attach(3);
 inGate.write(0);

 pinMode(A0, INPUT);
 pinMode(12, OUTPUT);
 pinMode(13, OUTPUT);

}

String pass;
int k = 0;
void loop()
{
 char customKey = customKeypad.getKey();
 if(customKey) {
  pass += customKey;
  k ++;
  Serial.println(pass);
 }


 //Serial.println(pass=="1234");

 if(pass=="1234"){
  inGate.write(90);
  delay(1000);
  inGate.write(0);
  pass = "";
  k = 0;
  digitalWrite(13, HIGH);
  delay(1000);
  digitalWrite(13, LOW);
 }
 else
  inGate.write(0);

 int val = analogRead(A0);
 // Serial.println(val);
 if(val > 200)
  digitalWrite(12, HIGH);
 else
  digitalWrite(12, LOW);
```

```
  if(digitalRead(2))
    digitalWrite(0, HIGH);
  else
    digitalWrite(0, LOW);


}
```
