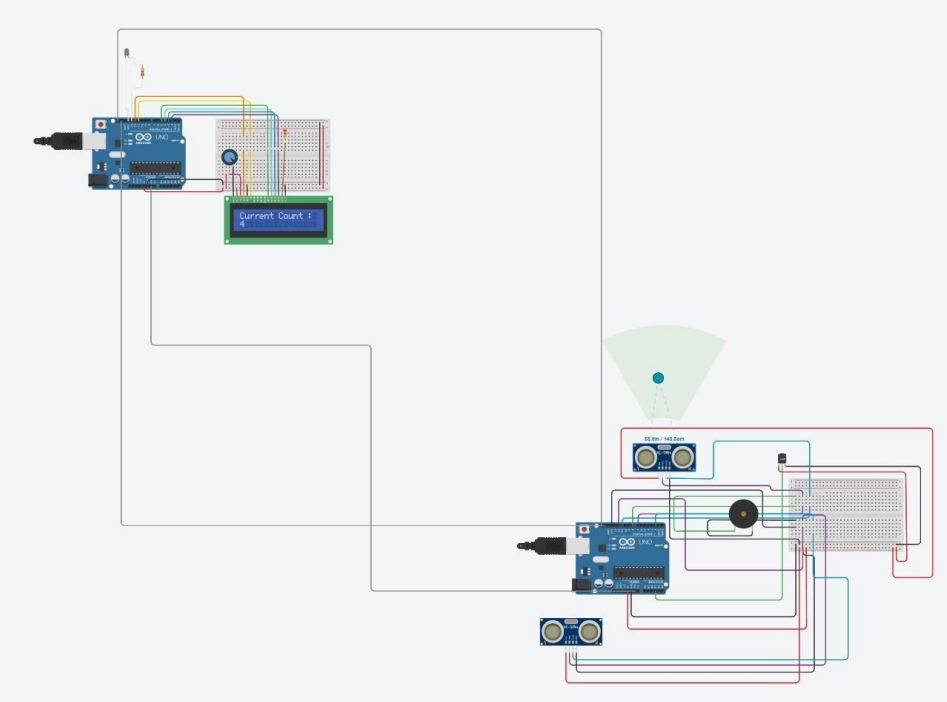
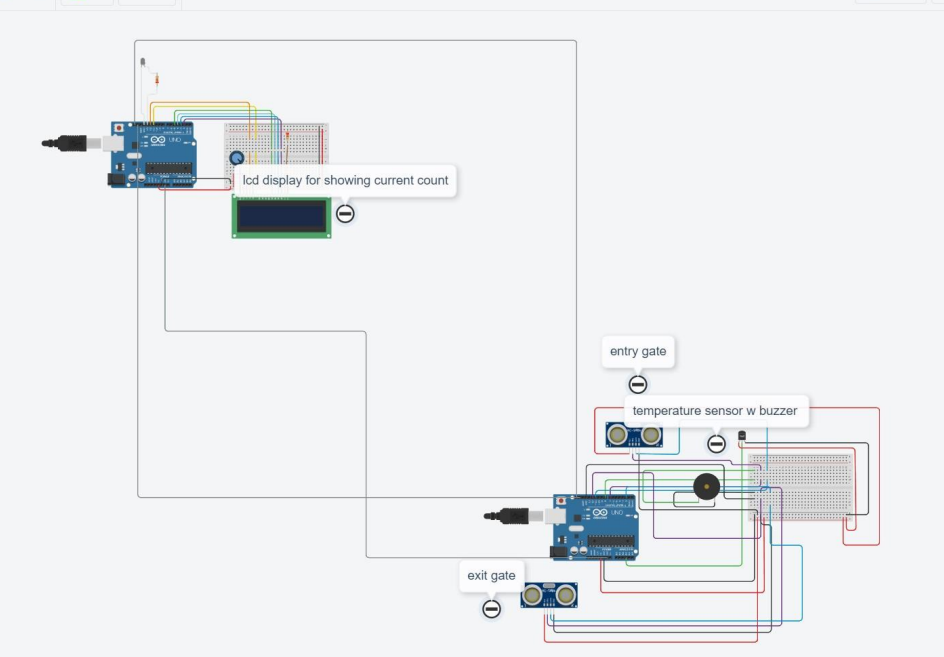
EMBEDDED SYSTEMS

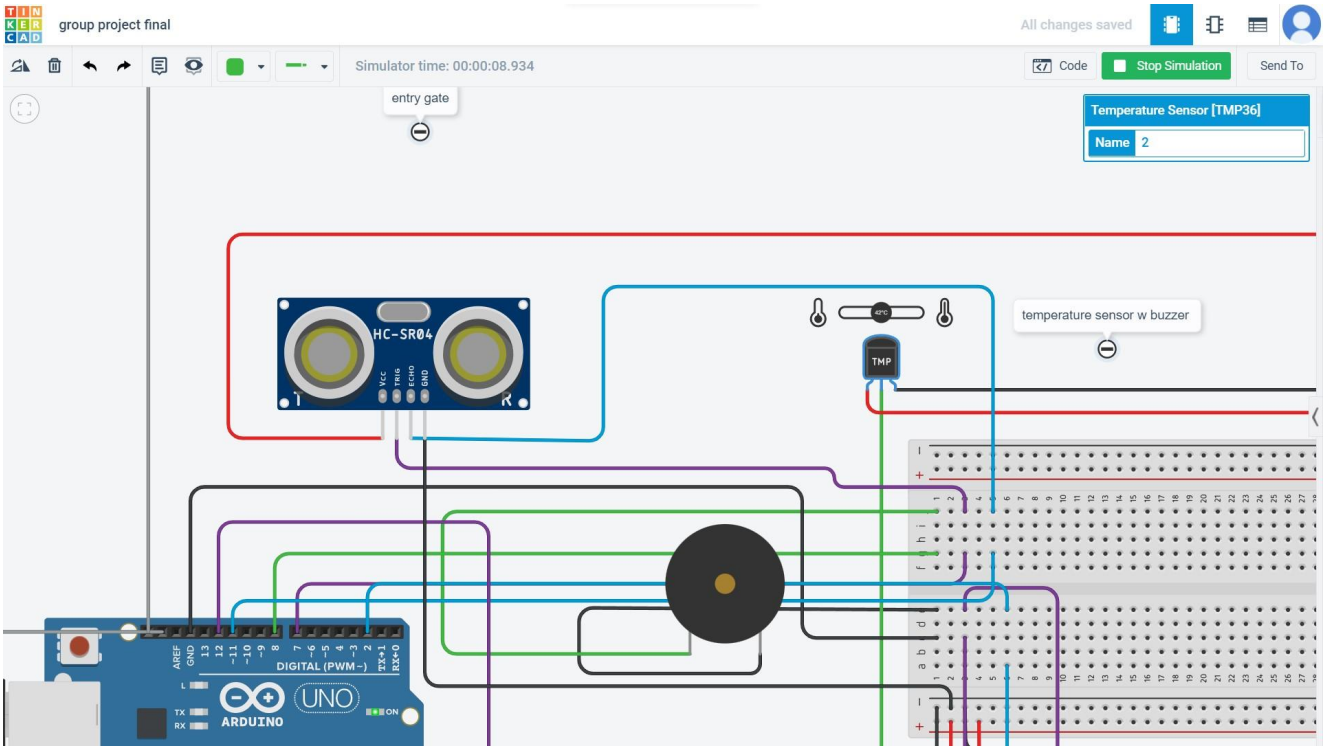
MINOR PROJECT- MORSE CODE CONVERTER

MADE BY - RAUNAK KODWANI

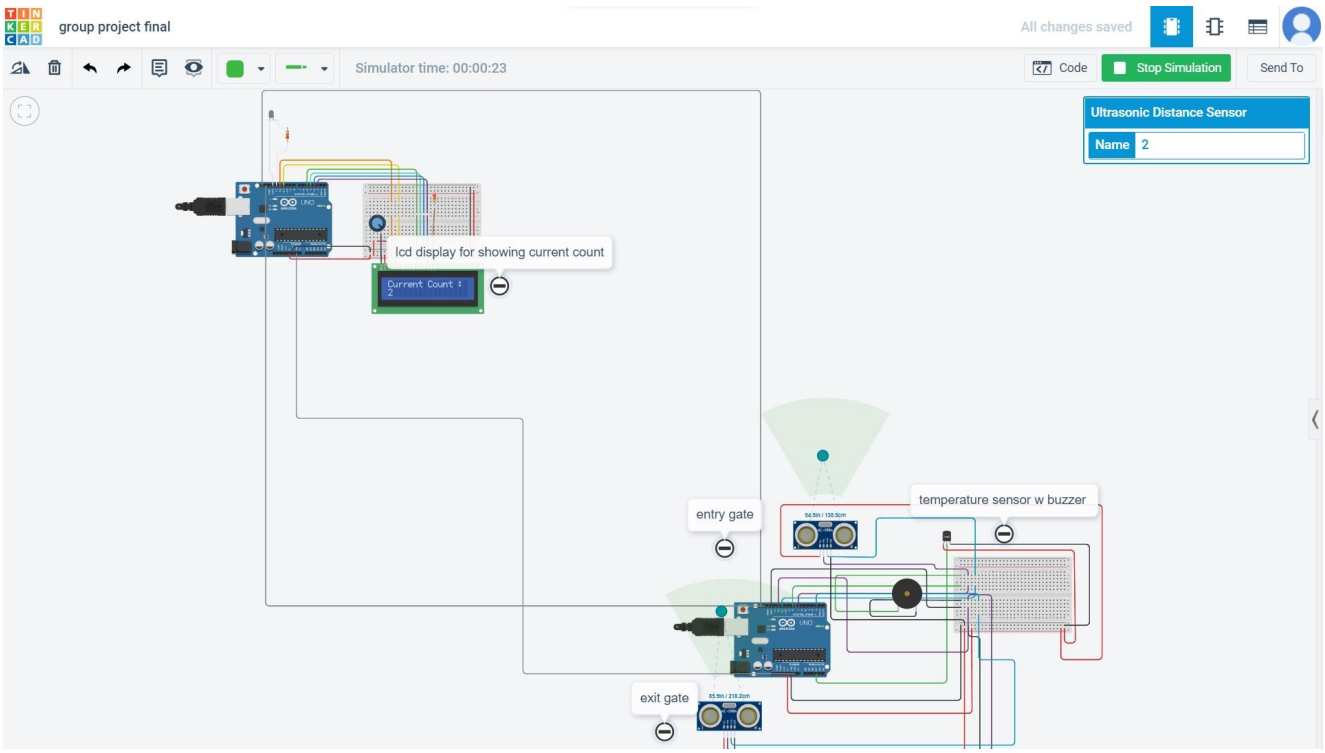
OUTPUT DIAGRAM :



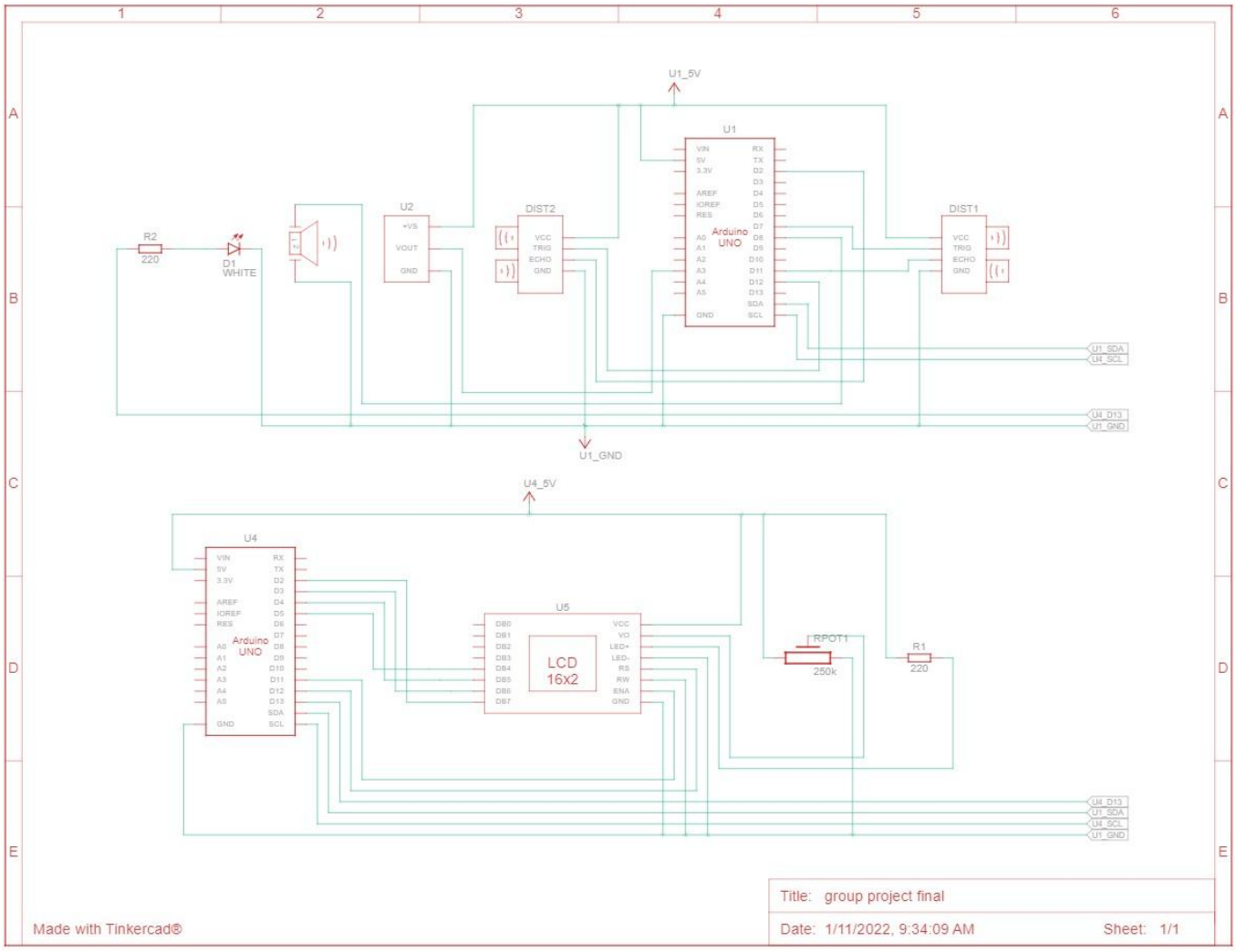




CIRCUIT DIAGRAM:



SCHEMATIC DIAGRAM:



CODE:

CODE FOR BOARD 1 (INPUT BOARD FOR TAKING INPUT FROM SENSORS) :

```
#include <Wire.h>

int dist_entry_prev = 0;

int dist_exit_prev = 0;

long readUltrasonicDistance(int triggerPin, int echoPin)
{
 pinMode(triggerPin, OUTPUT);  // Clear the trigger
 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 returns the sound wave travel time in microseconds
 return pulseIn(echoPin, HIGH);
}

void setup()
{
 pinMode(A3, INPUT);
 pinMode(8, OUTPUT);
 Serial.begin(9600);
 Wire.begin();

}

void loop()
{
```

```
 if (-40 + 0.488155 * (analogRead(A3) - 20) > 40) {
  tone(8, 440, 1000); // play tone 57 (A4 = 440 Hz)
 } else {
  if (dist_entry_prev != 0.01723 * readUltrasonicDistance(7, 11)) {
   delay(500); // Wait for 1000 millisecond(s)

   if (0.01723 * readUltrasonicDistance(7, 11) < 40)
   {

    Wire.beginTransmission(8);
    Wire.write('f');
    Wire.endTransmission();
   }
   dist_entry_prev = 0.01723 * readUltrasonicDistance(7, 11);
  }
 }
 if (dist_exit_prev != 0.01723 * readUltrasonicDistance(12, 2)) {
  delay(500); // Wait for 1000 millisecond(s)

  if (0.01723 * readUltrasonicDistance(12, 2) < 40)
  {

   Wire.beginTransmission(8);
   Wire.write('e');
   Wire.endTransmission();
   }
  dist_exit_prev = 0.01723 * readUltrasonicDistance(12, 2);
 }
}
```

CODE FOR BOARD 2 (OUTPUT BOARD CONTAINING LCD) :

```
#include <LiquidCrystal.h>

#include<Wire.h>
LiquidCrystal lcd(12, 11, 5, 4, 3, 2);
int counter=0;
void setup() {
 lcd.begin(16,2);
 pinMode(LED_BUILTIN, OUTPUT);
 Wire.begin(8);
 Wire.onReceive(receiveEvent);
 Serial.begin(9600);
 lcd.setCursor(0,0);
 lcd.print("Current Count : ");
}

void loop() {
 delay(10);
}
void receiveEvent(int howMany)
{
 while (1 < Wire.available())
 {
  char c = Wire.read();
 }
 int x=Wire.read();
 if (x==102)
 {
  counter+=1;

  lcd.setCursor(0,1);
  lcd.print(counter);
  delay(5000);
 }
 if (x==101)
 {
```

```
    counter-=1;
    lcd.setCursor(0,1);
    lcd.print(counter);
    delay(5000);
  }
  if (counter<0)
  {
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("Current Count : ");

  }
}
```

X— END OF CODE —X

LINK TO PROJECT SIMULATION :

MAJOR PROJECT - VISITOR COUNTER WITH TEMPERATURE SENSOR

COMPONENT LIST CSV :

COMPONENTS LIST CSV FILE