

Name: KANIMOZHI.M

Roll NO: 19EC09

ASSIGNMENT 1

SOURCE CODE:

```
#include <Servo.h>

int output1Value = 0;
int sen1Value = 0;
int sen2Value = 0;
int const gas_sensor = A1;
int const LDR = A0;
int limit = 400;

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);
}

Servo servo_7;

void setup()
{
```

```

    Serial.begin(9600);           //initialize serial communication
    pinMode(A0, INPUT);          //LDR
    pinMode(A1, INPUT);          //gas sensor
    pinMode(13, OUTPUT);          //connected to relay
    servo_7.attach(7, 500, 2500); //servo motor

    pinMode(8, OUTPUT);          //signal to piezo buzzer
    pinMode(9, INPUT);           //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 val1 = analogRead(LDR);
    if (val1 > 500)
    {
        digitalWrite(13, LOW);
        Serial.print("Bulb ON = ");
        Serial.print(val1);
    }
    else
    {
        digitalWrite(13, HIGH);
        Serial.print("Bulb OFF = ");
        Serial.print(val1);
    }
}

```

```

//-----
//----- light & fan control -----//
//-----

sen2Value = digitalRead(9);
if (sen2Value == 0)
{
    digitalWrite(10, LOW); //npn as switch OFF
    digitalWrite(4, HIGH); // Red LED ON, indicating no motion
    digitalWrite(3, LOW); //Green LED OFF, since no Motion detected
    Serial.print("    || NO Motion Detected  ");
}

if (sen2Value == 1)
{
    digitalWrite(10, HIGH); //npn as switch ON
    delay(3000);
    digitalWrite(4, LOW); // RED LED OFF
    digitalWrite(3, HIGH); //GREEN LED ON , indicating motion detected
    Serial.print("        || Motion Detected!    ");
}
delay(300);

//-----
// ----- Gas Sensor -----//
//-----

int val = analogRead(gas_sensor); //read sensor value
Serial.print("|| Gas Sensor Value = ");
Serial.print(val); //Printing in serial monitor
//val = map(val, 300, 750, 0, 100);
if (val > limit)
{

```

```

        tone(8, 650);
    }
    delay(300);
    noTone(8);

//-----

    //----- servo motor -----//

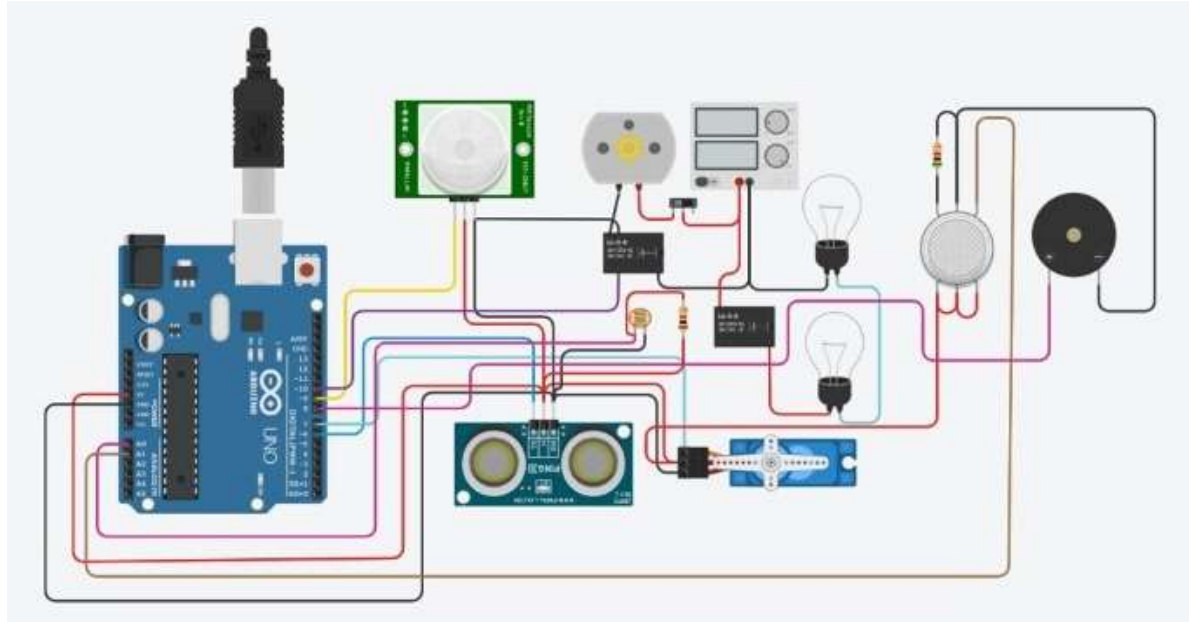
//-----

    sen1Value = 0.01723 * readUltrasonicDistance(6, 6);

    if (sen1Value < 100)
    {
        servo_7.write(90);
        Serial.print("  || Door Open! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");

    }
    else
    {
        servo_7.write(0);
        Serial.print("  || Door Closed! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");
    }
    delay(10); // Delay a little bit to improve simulation performance
}

```



Name: KANAGA.E

Roll NO: 19EC08

ASSIGNMENT 1

SOURCE CODE:

```
#include <Servo.h>

int output1Value = 0;
int sen1Value = 0;
int sen2Value = 0;
int const gas_sensor = A1;
int const LDR = A0;
int limit = 400;

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);
}

Servo servo_7;

void setup()
{
```

```

    Serial.begin(9600);           //initialize serial communication
    pinMode(A0, INPUT);          //LDR
    pinMode(A1, INPUT);          //gas sensor
    pinMode(13, OUTPUT);         //connected to relay
    servo_7.attach(7, 500, 2500); //servo motor

    pinMode(8, OUTPUT);          //signal to piezo buzzer
    pinMode(9, INPUT);           //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 val1 = analogRead(LDR);
    if (val1 > 500)
    {
        digitalWrite(13, LOW);
        Serial.print("Bulb ON = ");
        Serial.print(val1);
    }
    else
    {
        digitalWrite(13, HIGH);
        Serial.print("Bulb OFF = ");
        Serial.print(val1);
    }
}

```

```

//-----
//----- light & fan control -----//
//-----

sen2Value = digitalRead(9);
if (sen2Value == 0)
{
    digitalWrite(10, LOW); //npn as switch OFF
    digitalWrite(4, HIGH); // Red LED ON, indicating no motion
    digitalWrite(3, LOW); //Green LED OFF, since no Motion detected
    Serial.print("    || NO Motion Detected  ");
}

if (sen2Value == 1)
{
    digitalWrite(10, HIGH); //npn as switch ON
    delay(3000);
    digitalWrite(4, LOW); // RED LED OFF
    digitalWrite(3, HIGH); //GREEN LED ON , indicating motion detected
    Serial.print("        || Motion Detected!  ");
}
delay(300);

//-----
// ----- Gas Sensor -----//
//-----

int val = analogRead(gas_sensor); //read sensor value
Serial.print("|| Gas Sensor Value = ");
Serial.print(val); //Printing in serial monitor
//val = map(val, 300, 750, 0, 100);
if (val > limit)
{

```



```

        tone(8, 650);
    }
    delay(300);
    noTone(8);

//-----

    //----- servo motor -----//

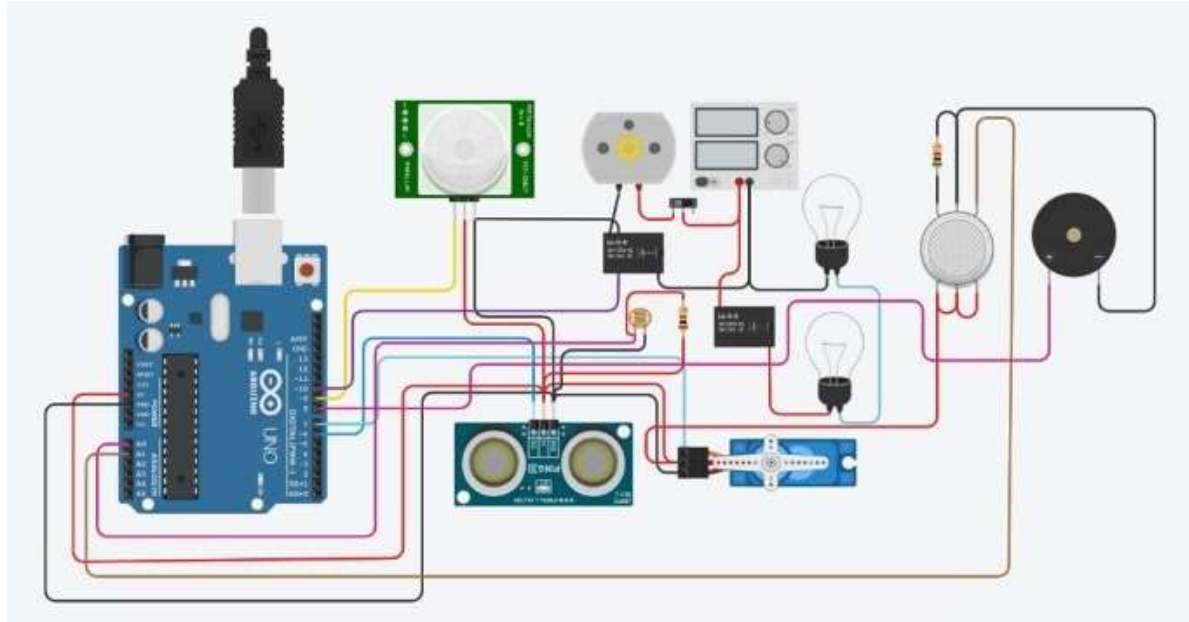
//-----

    sen1Value = 0.01723 * readUltrasonicDistance(6, 6);

    if (sen1Value < 100)
    {
        servo_7.write(90);
        Serial.print("  || Door Open! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");

    }
    else
    {
        servo_7.write(0);
        Serial.print("  || Door Closed! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");
    }
    delay(10); // Delay a little bit to improve simulation performance
}

```



Name: PREETHIKA S

Roll NO: 19EC14

ASSIGNMENT 1

SOURCE CODE:

```
#include <Servo.h>

int output1Value = 0;
int sen1Value = 0;
int sen2Value = 0;
int const gas_sensor = A1;
int const LDR = A0;
int limit = 400;

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);
}

Servo servo_7;

void setup()
{
```

```

    Serial.begin(9600);           //initialize serial communication
    pinMode(A0, INPUT);          //LDR
    pinMode(A1, INPUT);          //gas sensor
    pinMode(13, OUTPUT);          //connected to relay
    servo_7.attach(7, 500, 2500); //servo motor

    pinMode(8, OUTPUT);           //signal to piezo buzzer
    pinMode(9, INPUT);            //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 val1 = analogRead(LDR);
    if (val1 > 500)
    {
        digitalWrite(13, LOW);
        Serial.print("Bulb ON = ");
        Serial.print(val1);
    }
    else
    {
        digitalWrite(13, HIGH);
        Serial.print("Bulb OFF = ");
        Serial.print(val1);
    }
}

```

```

//-----
//----- light & fan control -----//
//-----

sen2Value = digitalRead(9);
if (sen2Value == 0)
{
    digitalWrite(10, LOW); //npn as switch OFF
    digitalWrite(4, HIGH); // Red LED ON, indicating no motion
    digitalWrite(3, LOW); //Green LED OFF, since no Motion detected
    Serial.print("    || NO Motion Detected  ");
}

if (sen2Value == 1)
{
    digitalWrite(10, HIGH); //npn as switch ON
    delay(3000);
    digitalWrite(4, LOW); // RED LED OFF
    digitalWrite(3, HIGH); //GREEN LED ON , indicating motion detected
    Serial.print("        || Motion Detected!  ");
}
delay(300);

//-----
// ----- Gas Sensor -----//
//-----

int val = analogRead(gas_sensor); //read sensor value
Serial.print("|| Gas Sensor Value = ");
Serial.print(val); //Printing in serial monitor
//val = map(val, 300, 750, 0, 100);
if (val > limit)
{

```

```

        tone(8, 650);
    }
    delay(300);
    noTone(8);

//-----

    //----- servo motor -----//

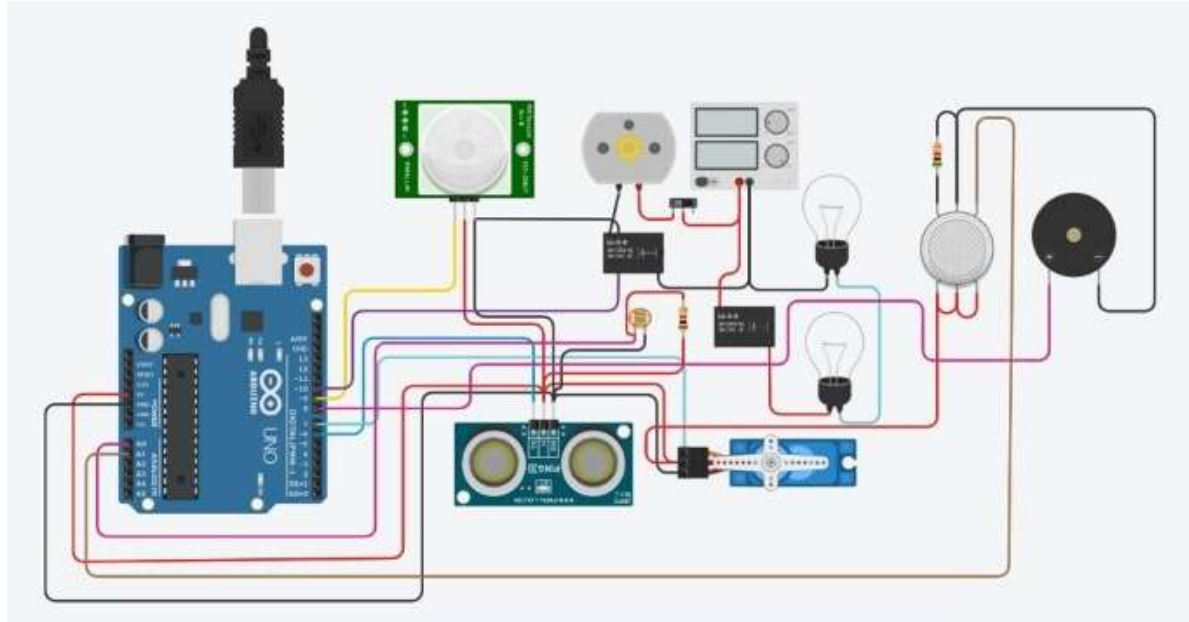
//-----

    sen1Value = 0.01723 * readUltrasonicDistance(6, 6);

    if (sen1Value < 100)
    {
        servo_7.write(90);
        Serial.print("  || Door Open! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");

    }
    else
    {
        servo_7.write(0);
        Serial.print("  || Door Closed! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");
    }
    delay(10); // Delay a little bit to improve simulation performance
}

```



Name:HARINI.N

Roll NO: 19EC07

ASSIGNMENT 1

SOURCE CODE:

```
#include <Servo.h>

int output1Value = 0;
int sen1Value = 0;
int sen2Value = 0;
int const gas_sensor = A1;
int const LDR = A0;
int limit = 400;

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);
}

Servo servo_7;

void setup()
{
```



```

    Serial.begin(9600);           //initialize serial communication
    pinMode(A0, INPUT);          //LDR
    pinMode(A1, INPUT);          //gas sensor
    pinMode(13, OUTPUT);          //connected to relay
    servo_7.attach(7, 500, 2500); //servo motor

    pinMode(8, OUTPUT);          //signal to piezo buzzer
    pinMode(9, INPUT);           //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 val1 = analogRead(LDR);
    if (val1 > 500)
    {
        digitalWrite(13, LOW);
        Serial.print("Bulb ON = ");
        Serial.print(val1);
    }
    else
    {
        digitalWrite(13, HIGH);
        Serial.print("Bulb OFF = ");
        Serial.print(val1);
    }
}

```

```

//-----
//----- light & fan control -----//
//-----

sen2Value = digitalRead(9);
if (sen2Value == 0)
{
    digitalWrite(10, LOW); //npn as switch OFF
    digitalWrite(4, HIGH); // Red LED ON, indicating no motion
    digitalWrite(3, LOW); //Green LED OFF, since no Motion detected
    Serial.print("    || NO Motion Detected    ");
}

if (sen2Value == 1)
{
    digitalWrite(10, HIGH); //npn as switch ON
    delay(3000);
    digitalWrite(4, LOW); // RED LED OFF
    digitalWrite(3, HIGH); //GREEN LED ON , indicating motion detected
    Serial.print("        || Motion Detected!    ");
}
delay(300);

//-----
// ----- Gas Sensor -----//
//-----

int val = analogRead(gas_sensor); //read sensor value
Serial.print("|| Gas Sensor Value = ");
Serial.print(val); //Printing in serial monitor
//val = map(val, 300, 750, 0, 100);
if (val > limit)
{

```

```

        tone(8, 650);
    }
    delay(300);
    noTone(8);

//-----

    //----- servo motor -----//

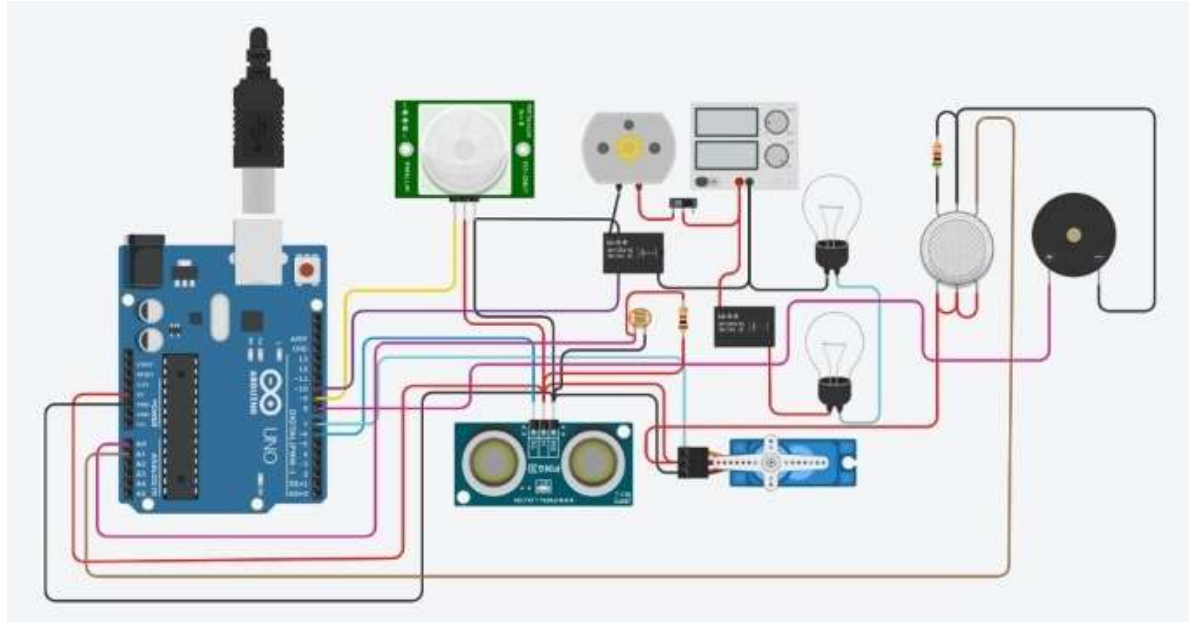
//-----

    sen1Value = 0.01723 * readUltrasonicDistance(6, 6);

    if (sen1Value < 100)
    {
        servo_7.write(90);
        Serial.print("  || Door Open! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");

    }
    else
    {
        servo_7.write(0);
        Serial.print("  || Door Closed! ; Distance = ");
        Serial.print(sen1Value);
        Serial.print("\n");
    }
    delay(10); // Delay a little bit to improve simulation performance
}

```



NAME: HARINI.N

ROLL NO: 19EC07

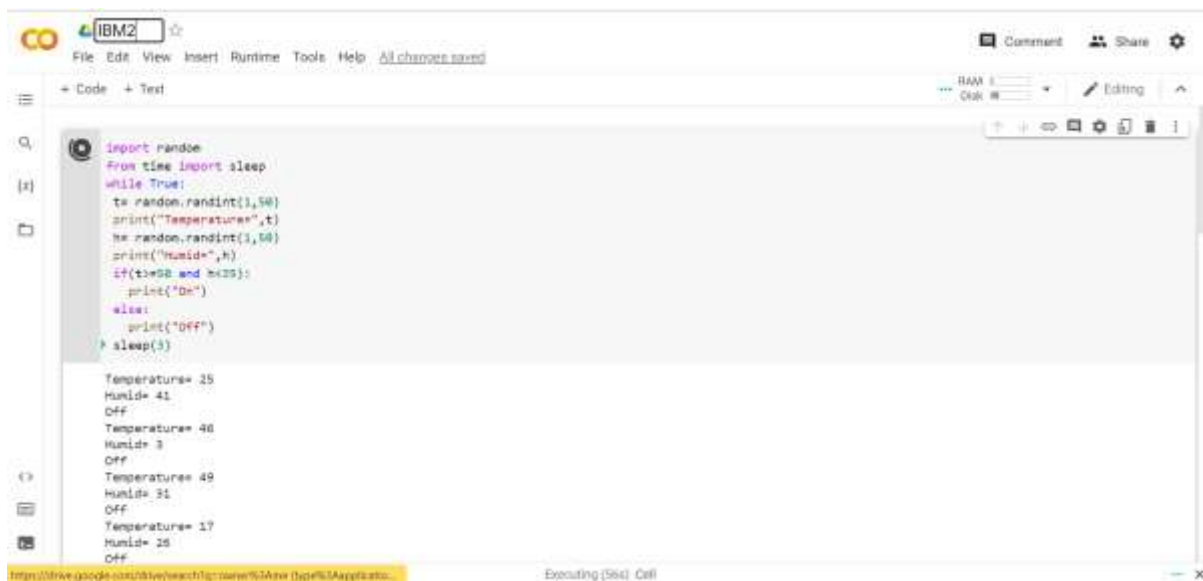
ASSIGNMENT 2

Temperature and humidity sensing and alarm automation

CODE:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

OUTPUT:



The screenshot shows a Jupyter Notebook window titled 'IBM2'. The code cell contains the following Python code:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

The output cell shows the following results:

```
Temperature= 25
Humid= 41
Off
Temperature= 40
Humid= 3
Off
Temperature= 49
Humid= 31
Off
Temperature= 17
Humid= 25
Off
```

The status bar at the bottom indicates 'Executing (584) Cell'.

NAME: KANIMOZHILM

ROLL NO: 19EC09

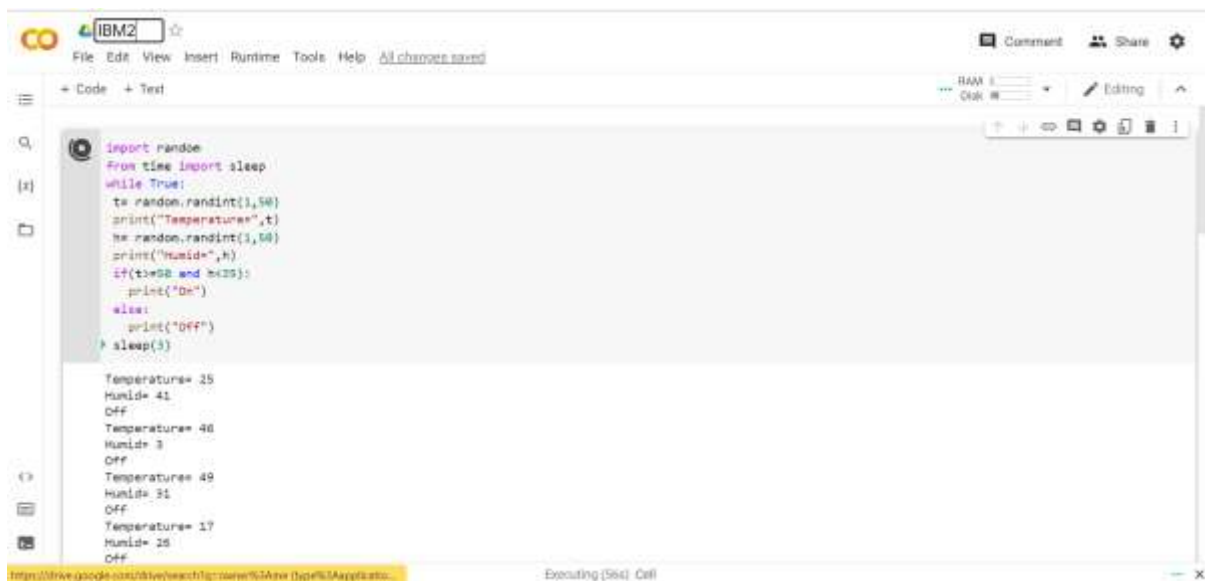
ASSIGNMENT 2

Temperature and humidity sensing and alarm automation

CODE:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

OUTPUT:



The screenshot shows a Jupyter Notebook window titled 'IBM2'. The code cell contains the following Python code:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

The output cell shows the following results:

```
Temperature= 25
Humid= 41
Off
Temperature= 40
Humid= 3
Off
Temperature= 49
Humid= 31
Off
Temperature= 17
Humid= 25
Off
```

The status bar at the bottom indicates 'Executing (584) Cell'.

NAME: KANAGA.E

ROLL NO: 19EC08

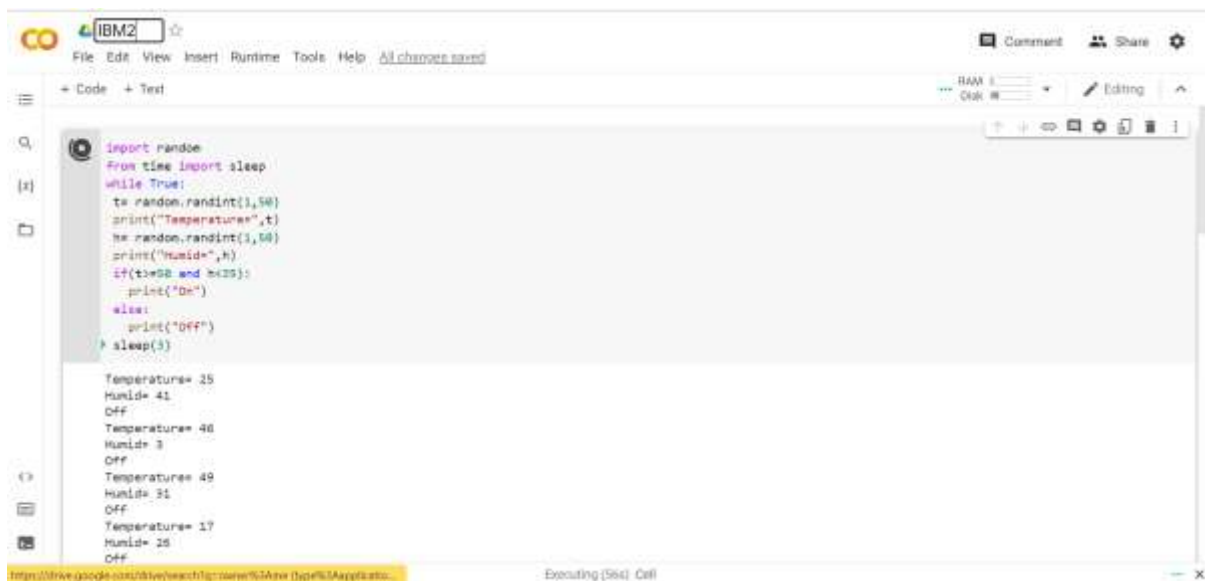
ASSIGNMENT 2

Temperature and humidity sensing and alarm automation

CODE:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

OUTPUT:



The screenshot shows a Jupyter Notebook window titled 'IBM2'. The code cell contains the following Python code:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

The output cell displays the results of the script's execution:

```
Temperature= 25
Humid= 41
Off
Temperature= 40
Humid= 3
Off
Temperature= 49
Humid= 31
Off
Temperature= 17
Humid= 25
Off
```

The status bar at the bottom indicates 'Executing (584) Cell'.

NAME: PREETHIKA S

ROLL NO: 19EC14

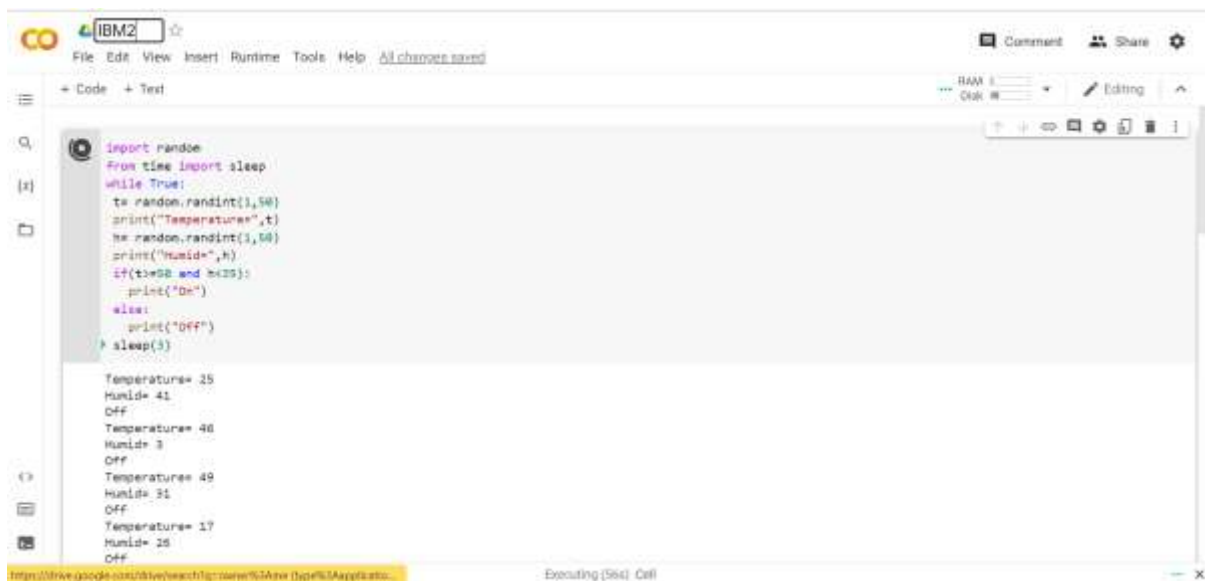
ASSIGNMENT 2

Temperature and humidity sensing and alarm automation

CODE:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

OUTPUT:



The screenshot shows a Jupyter Notebook window titled 'IBM2'. The code cell contains the following Python code:

```
import random
from time import sleep
while True:
    t= random.randint(1,50)
    print("Temperature=",t)
    h= random.randint(1,50)
    print("Humid=",h)
    if(t>=50 and h<35):
        print("On")
    else:
        print("Off")
    sleep(3)
```

The output cell displays the results of the code execution:

```
Temperature= 25
Humid= 41
Off
Temperature= 40
Humid= 3
Off
Temperature= 49
Humid= 31
Off
Temperature= 17
Humid= 25
Off
```

The status bar at the bottom indicates 'Executing (584) Cell'.

NAME : PREETHIKA S

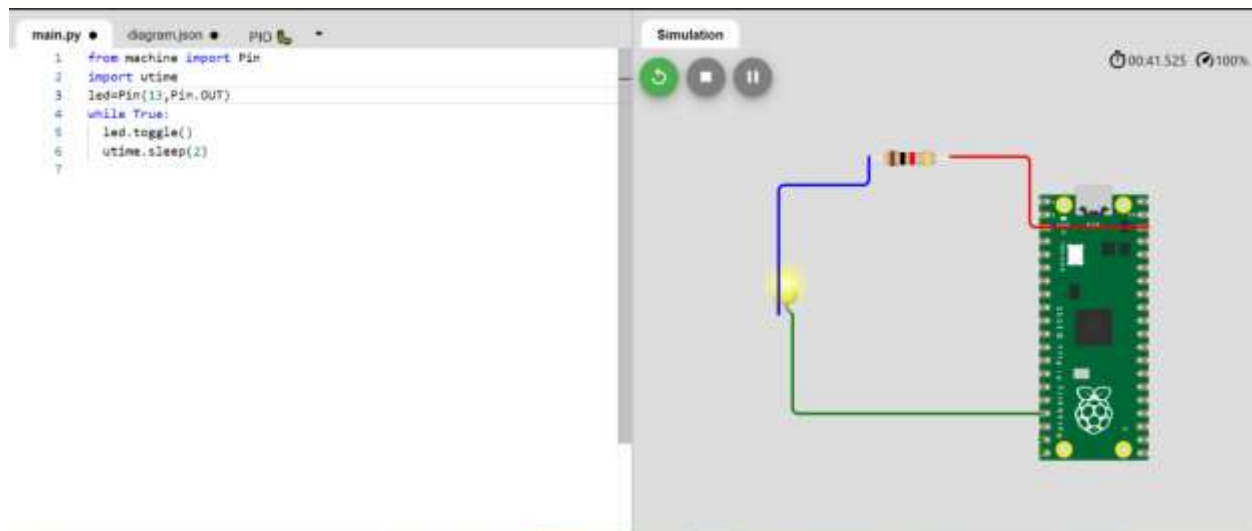
ROLL NO: 19EC14

ASSIGNMENT-3

1.LED

```
from machine import Pin
import utime
led=Pin(13,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(1)
```

OUTPUT:

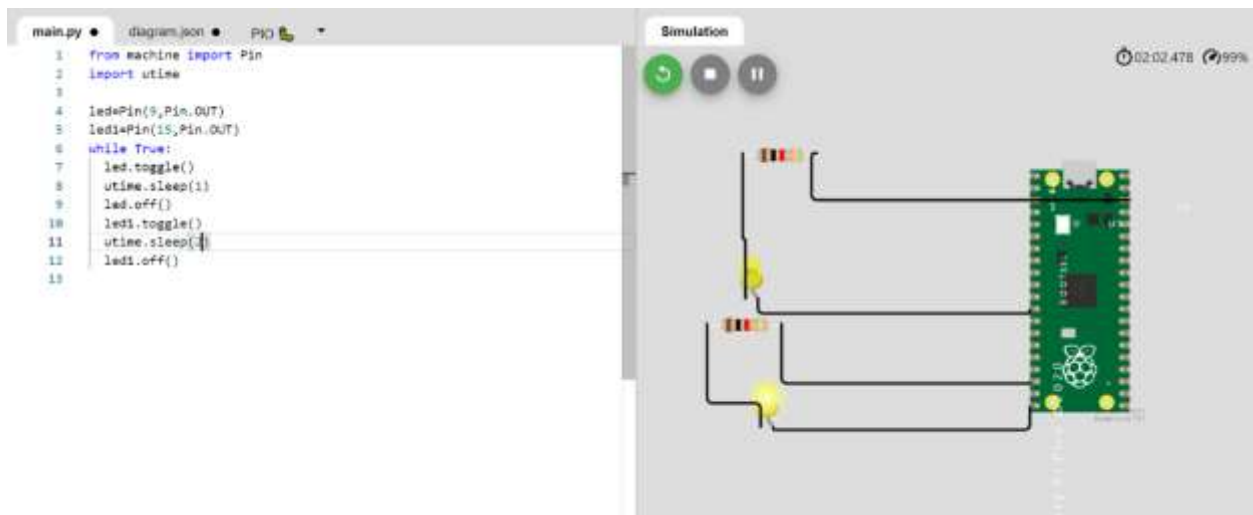
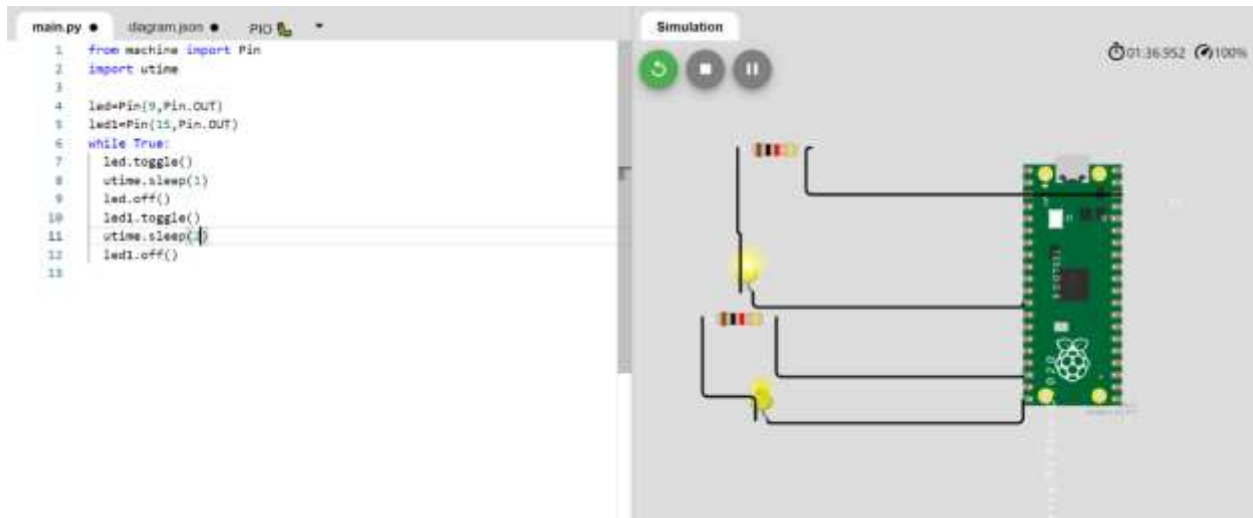


2.LEB BLINKING:

Main.py

```
from machine import Pin
import utime
led=Pin(9,Pin.OUT)
led1=Pin(15,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
    utime.sleep(3)
    led1.off()
```

OUTPUT:



Traffic Light

Main.py:

```
from machine import Pin
import utime
led=Pin(3,Pin.OUT)
led1=Pin(9,Pin.OUT)
led2=Pin(14,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
```


```
utime.sleep(3)
led1.off()
led2.toggle()
utime.sleep(3)
led1.off()
```

diagram.json:

```
{
  "version": 1,
  "author": "Kaneeshka Shanmugam",
  "editor": "wokwi",
  "parts": [
    {
      "type": "wokwi-pi-pico",
      "id": "pico",
      "top": 0,
      "left": 0,
      "attrs": { "env": "micropython-20220117-v1.18" }
    },
    {
      "type": "wokwi-led",
      "id": "led2",
      "top": 73.18,
      "left": -133.31,
      "attrs": { "color": "yellow" }
    },
    {
      "type": "wokwi-led",
      "id": "led3",
      "top": 143.51,
      "left": -134.98,
      "attrs": { "color": "limegreen" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": -24.49,
      "left": -129.65,
      "attrs": { "value": "1000" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r2",
      "top": 57.85,
      "left": -139.98,
```




```
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-resistor",
    "id": "r3",
    "top": 126.18,
    "left": -145.65,
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-led",
    "id": "led1",
    "top": 4.18,
    "left": -126.98,
    "attrs": { "color": "red" }
  }
],
"connections": [
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led1:A", "pico:GP3", "green", [ "v4.4", "h105" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led2:A", "pico:GP9", "green", [ "v2.73", "h108" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led3:A", "pico:GP14", "green", [ "v-0.26", "h111" ] ]
]
```

OUTPUT:

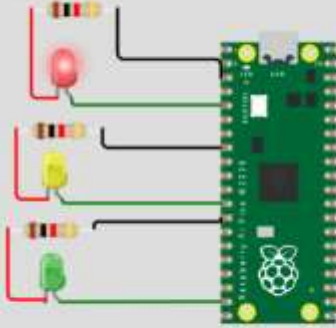
main.py • diagram.json • PIO 


```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation






00:55.992 99%



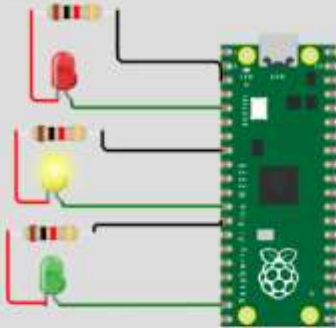
main.py • diagram.json • PIO 


```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation






00:39.311 99%



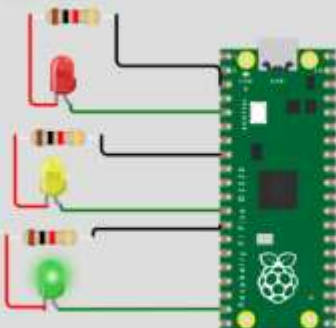
main.py • diagram.json • PIO 

```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation



01:56.849 99%



NAME : KANIMOZHI.M

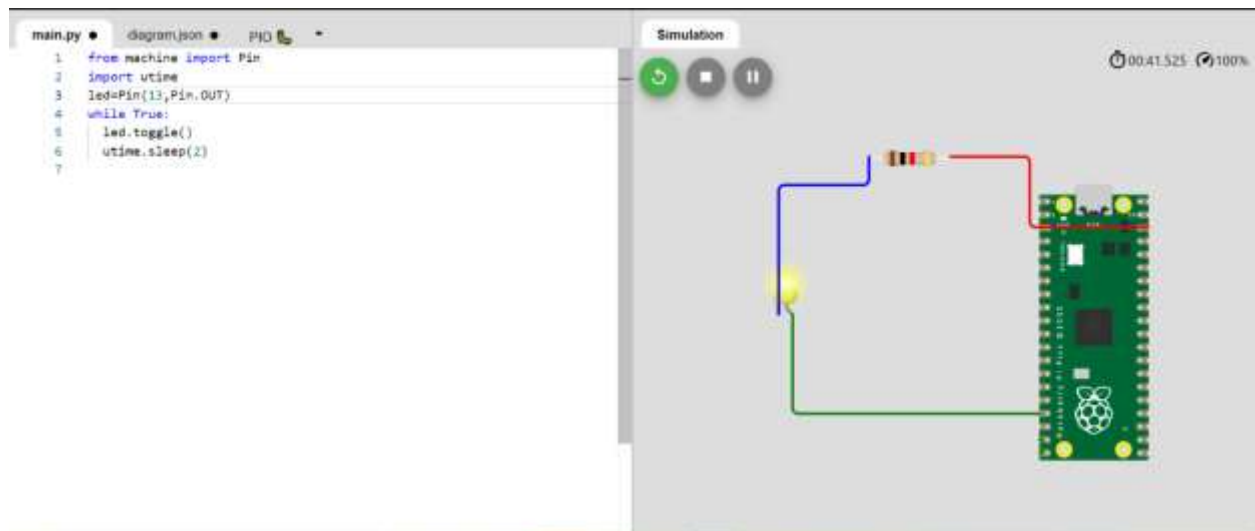
ROLL NO: 19EC09

ASSIGNMENT-3

1.LED

```
from machine import Pin
import utime
led=Pin(13,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(1)
```

OUTPUT:

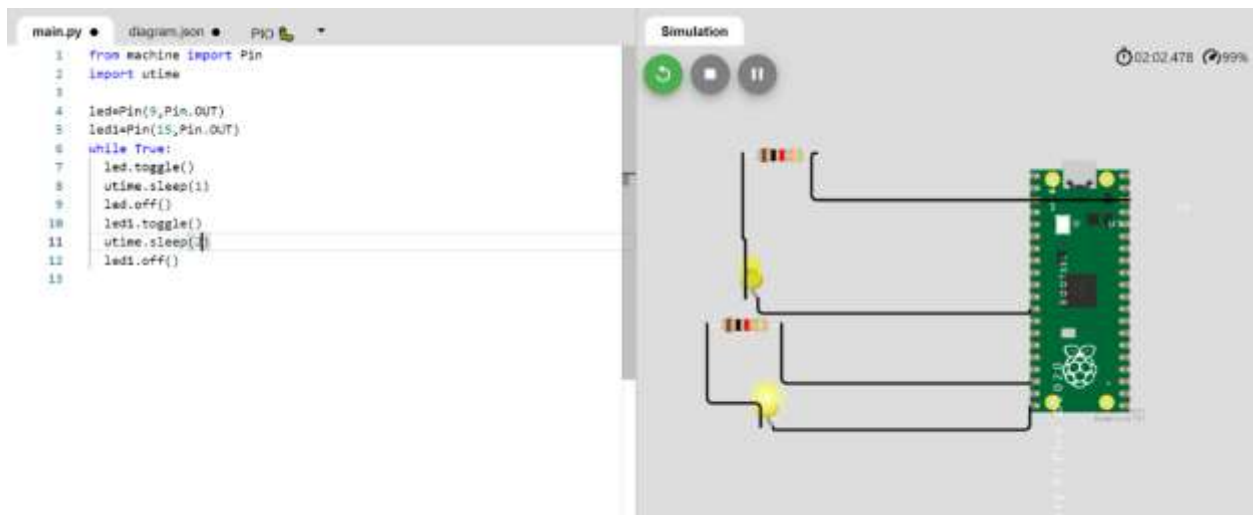
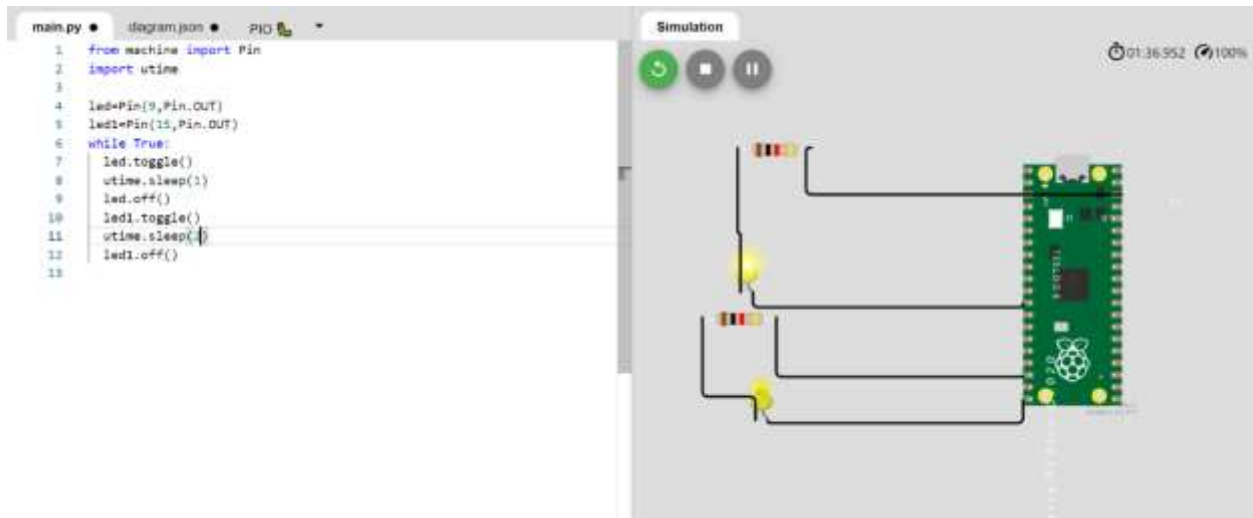


2.LEB BLINKING:

Main.py

```
from machine import Pin
import utime
led=Pin(9,Pin.OUT)
led1=Pin(15,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
    utime.sleep(3)
    led1.off()
```

OUTPUT:



Traffic Light

Main.py:

```
from machine import Pin
import utime
led=Pin(3,Pin.OUT)
led1=Pin(9,Pin.OUT)
led2=Pin(14,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
```

```
utime.sleep(3)
led1.off()
led2.toggle()
utime.sleep(3)
led1.off()
```


diagram.json:

```
{
  "version": 1,
  "author": "Kaneeshka Shanmugam",
  "editor": "wokwi",
  "parts": [
    {
      "type": "wokwi-pi-pico",
      "id": "pico",
      "top": 0,
      "left": 0,
      "attrs": { "env": "micropython-20220117-v1.18" }
    },
    {
      "type": "wokwi-led",
      "id": "led2",
      "top": 73.18,
      "left": -133.31,
      "attrs": { "color": "yellow" }
    },
    {
      "type": "wokwi-led",
      "id": "led3",
      "top": 143.51,
      "left": -134.98,
      "attrs": { "color": "limegreen" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": -24.49,
      "left": -129.65,
      "attrs": { "value": "1000" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r2",
      "top": 57.85,
      "left": -139.98,
```






```
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-resistor",
    "id": "r3",
    "top": 126.18,
    "left": -145.65,
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-led",
    "id": "led1",
    "top": 4.18,
    "left": -126.98,
    "attrs": { "color": "red" }
  }
],
"connections": [
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led1:A", "pico:GP3", "green", [ "v4.4", "h105" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led2:A", "pico:GP9", "green", [ "v2.73", "h108" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led3:A", "pico:GP14", "green", [ "v-0.26", "h111" ] ]
]
```

OUTPUT:

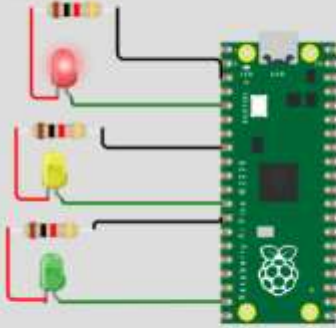
main.py • diagram.json • PIO 


```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation






00:55.992 99%



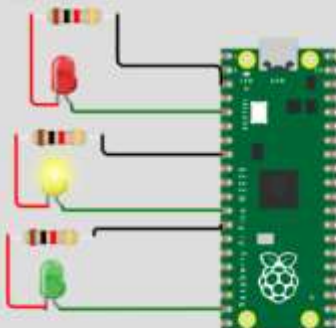
main.py • diagram.json • PIO 


```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation






00:39.311 99%



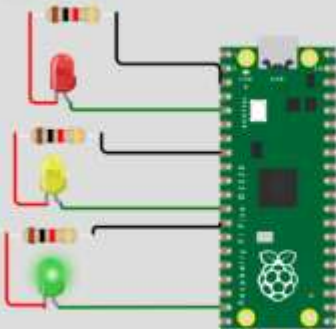
main.py • diagram.json • PIO 

```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation



01:56.849 99%



NAME : HARINI.N

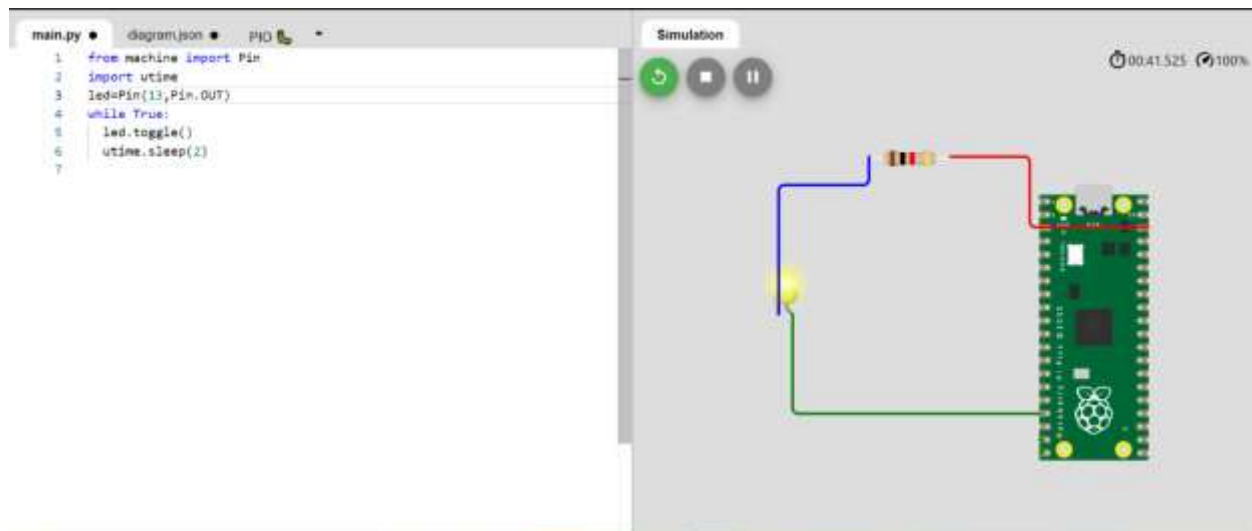
ROLL NO: 19EC07

ASSIGNMENT-3

1.LED

```
from machine import Pin
import utime
led=Pin(13,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(1)
```

OUTPUT:

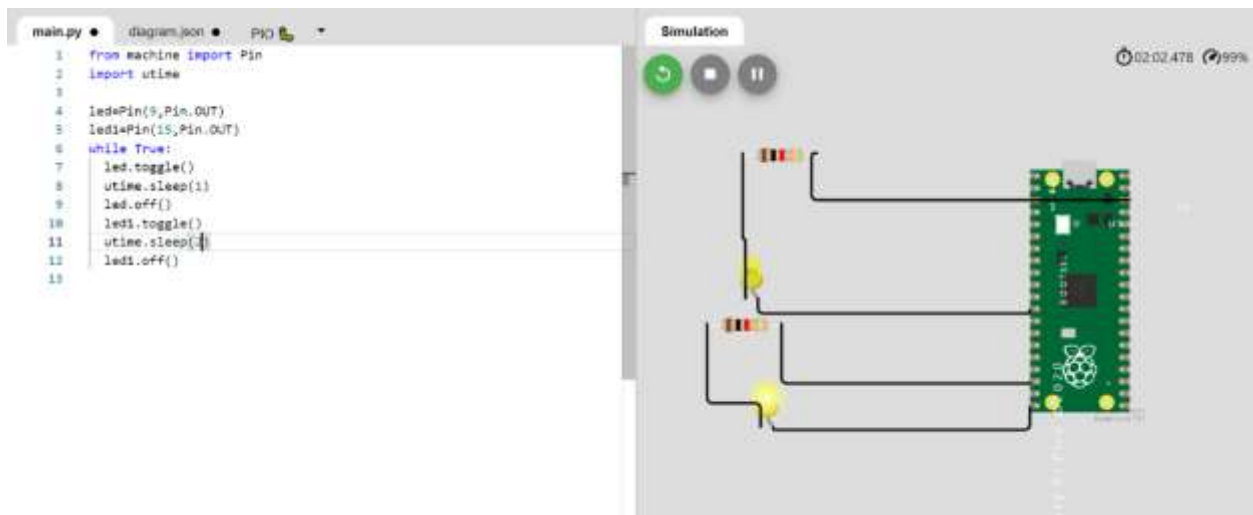


2.LEB BLINKING:

Main.py

```
from machine import Pin
import utime
led=Pin(9,Pin.OUT)
led1=Pin(15,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
    utime.sleep(3)
    led1.off()
```

OUTPUT:



Traffic Light

Main.py:

```
from machine import Pin
import utime
led=Pin(3,Pin.OUT)
led1=Pin(9,Pin.OUT)
led2=Pin(14,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
```


```
utime.sleep(3)
led1.off()
led2.toggle()
utime.sleep(3)
led1.off()
```

diagram.json:

```
{
  "version": 1,
  "author": "Kaneeshka Shanmugam",
  "editor": "wokwi",
  "parts": [
    {
      "type": "wokwi-pi-pico",
      "id": "pico",
      "top": 0,
      "left": 0,
      "attrs": { "env": "micropython-20220117-v1.18" }
    },
    {
      "type": "wokwi-led",
      "id": "led2",
      "top": 73.18,
      "left": -133.31,
      "attrs": { "color": "yellow" }
    },
    {
      "type": "wokwi-led",
      "id": "led3",
      "top": 143.51,
      "left": -134.98,
      "attrs": { "color": "limegreen" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": -24.49,
      "left": -129.65,
      "attrs": { "value": "1000" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r2",
      "top": 57.85,
      "left": -139.98,
```




```
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-resistor",
    "id": "r3",
    "top": 126.18,
    "left": -145.65,
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-led",
    "id": "led1",
    "top": 4.18,
    "left": -126.98,
    "attrs": { "color": "red" }
  }
],
"connections": [
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led1:A", "pico:GP3", "green", [ "v4.4", "h105" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led2:A", "pico:GP9", "green", [ "v2.73", "h108" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led3:A", "pico:GP14", "green", [ "v-0.26", "h111" ] ]
]
```

OUTPUT:

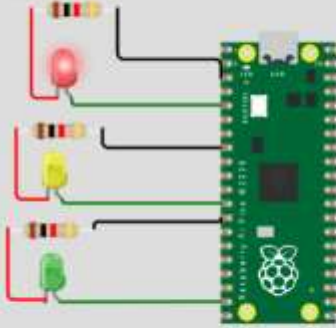
main.py • diagram.json • PIO 


```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation






00:55.992 99%



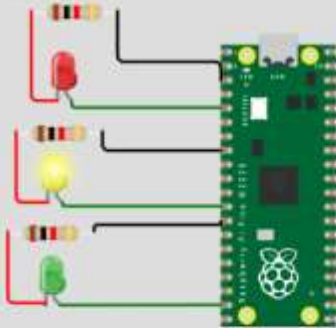
main.py • diagram.json • PIO 


```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation






00:39.311 99%



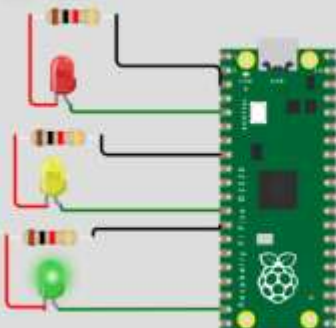
main.py • diagram.json • PIO 

```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation



01:56.849 99%



NAME : KANAGA.E

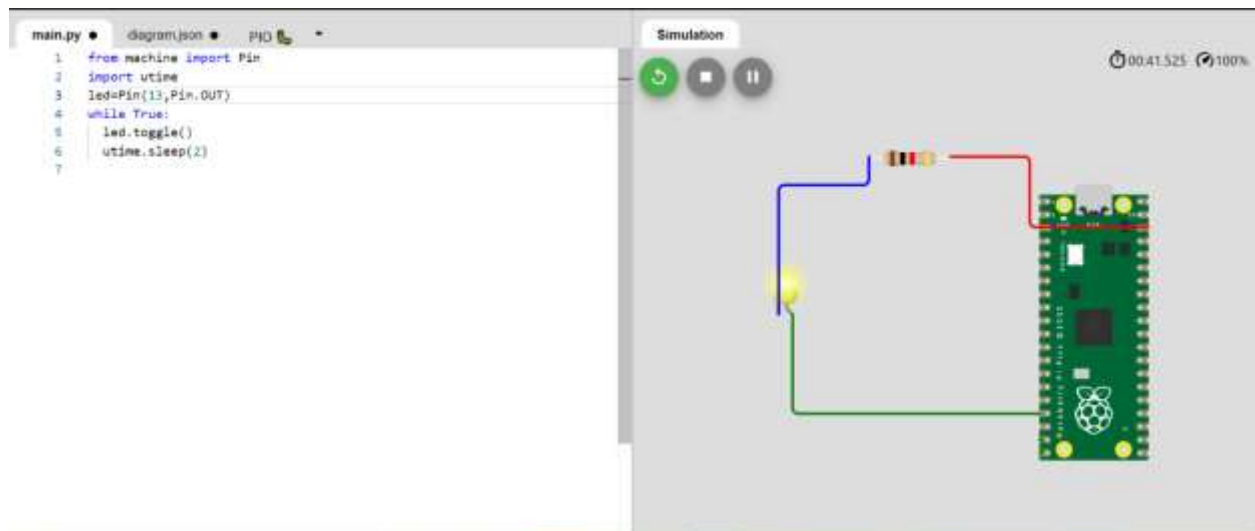
ROLL NO: 19EC08

ASSIGNMENT-3

1.LED

```
from machine import Pin
import utime
led=Pin(13,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(1)
```

OUTPUT:

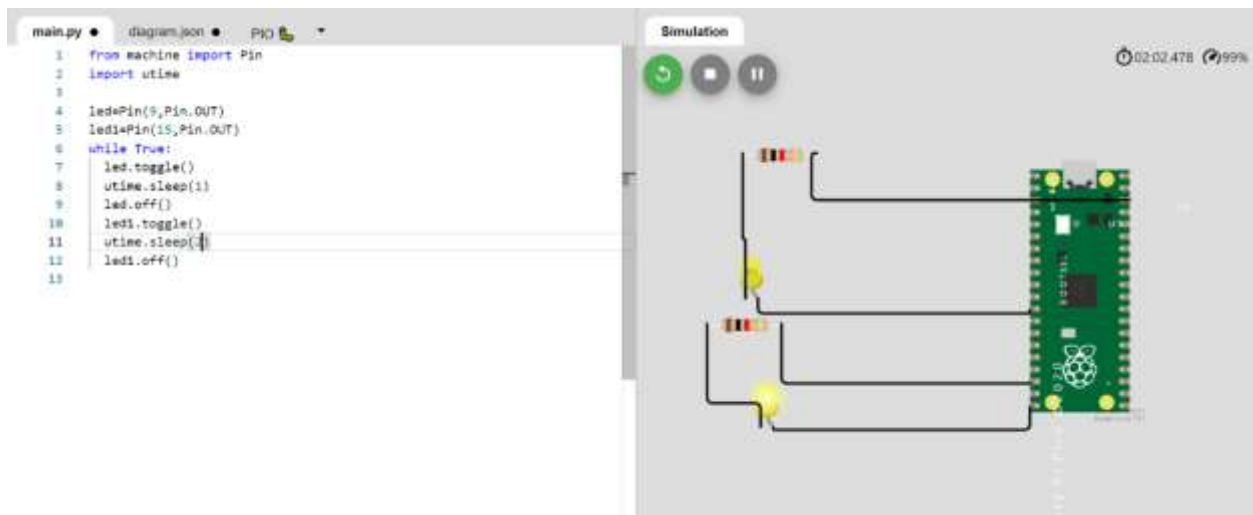
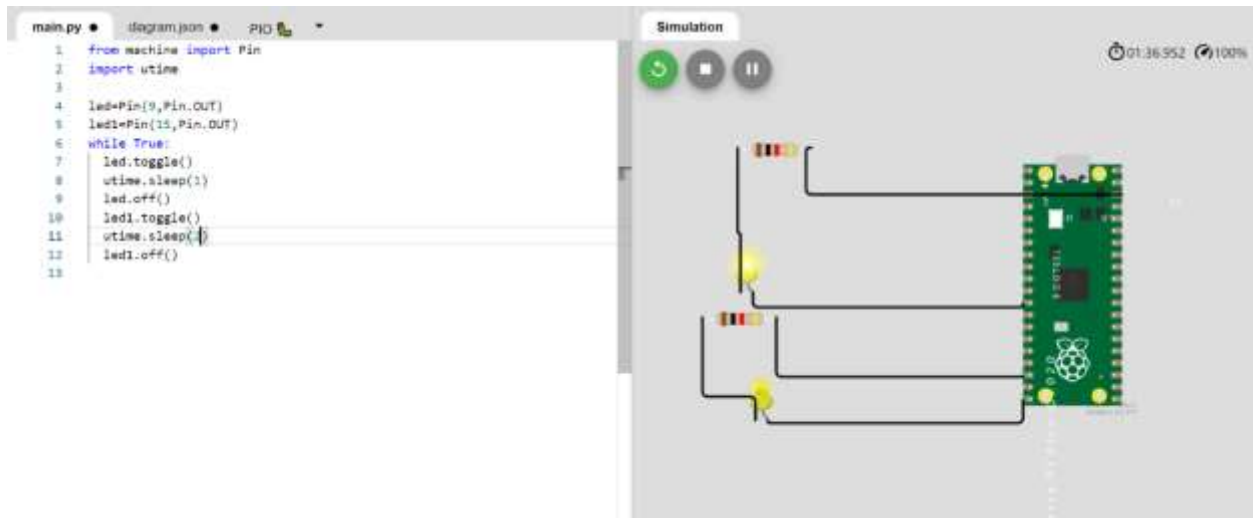


2.LEB BLINKING:

Main.py

```
from machine import Pin
import utime
led=Pin(9,Pin.OUT)
led1=Pin(15,Pin.OUT)
while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
    utime.sleep(3)
    led1.off()
```


OUTPUT:



Traffic Light

Main.py:

```
from machine import Pin
import utime

led=Pin(3,Pin.OUT)
led1=Pin(9,Pin.OUT)
led2=Pin(14,Pin.OUT)

while True:
    led.toggle()
    utime.sleep(3)
    led.off()
    led1.toggle()
```

```
utime.sleep(3)
led1.off()
led2.toggle()
utime.sleep(3)
led1.off()
```

diagram.json:

```
{
  "version": 1,
  "author": "Kaneeshka Shanmugam",
  "editor": "wokwi",
  "parts": [
    {
      "type": "wokwi-pi-pico",
      "id": "pico",
      "top": 0,
      "left": 0,
      "attrs": { "env": "micropython-20220117-v1.18" }
    },
    {
      "type": "wokwi-led",
      "id": "led2",
      "top": 73.18,
      "left": -133.31,
      "attrs": { "color": "yellow" }
    },
    {
      "type": "wokwi-led",
      "id": "led3",
      "top": 143.51,
      "left": -134.98,
      "attrs": { "color": "limegreen" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r1",
      "top": -24.49,
      "left": -129.65,
      "attrs": { "value": "1000" }
    },
    {
      "type": "wokwi-resistor",
      "id": "r2",
      "top": 57.85,
      "left": -139.98,
```

```

    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-resistor",
    "id": "r3",
    "top": 126.18,
    "left": -145.65,
    "attrs": { "value": "1000" }
  },
  {
    "type": "wokwi-led",
    "id": "led1",
    "top": 4.18,
    "left": -126.98,
    "attrs": { "color": "red" }
  }
],
"connections": [
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led1:A", "pico:GP3", "green", [ "v4.4", "h105" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led2:A", "pico:GP9", "green", [ "v2.73", "h108" ] ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "undefined:undefined", "undefined:undefined", null, null ],
  [ "led3:A", "pico:GP14", "green", [ "v-0.26", "h111" ] ]
]
}

```


OUTPUT:

main.py • diagram.json • PIO

```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation

00:55.992 99%




main.py • diagram.json • PIO

```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation

00:39.311 99%

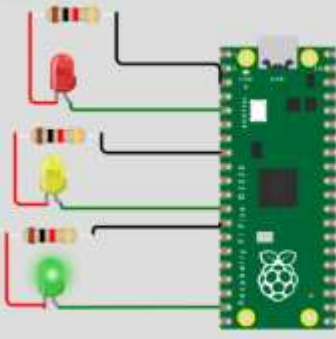


main.py • diagram.json • PIO

```
1 from machine import Pin
2 import utime
3 led=Pin(3,Pin.OUT)
4 led1=Pin(9,Pin.OUT)
5 led2=Pin(14,Pin.OUT)
6 while True:
7     led.toggle()
8     utime.sleep(3)
9     led.off()
10    led1.toggle()
11    utime.sleep(3)
12    led1.off()
13    led2.toggle()
14    utime.sleep(3)
15    led1.off()
16
```

Simulation

01:56.849 99%



Name: HARINI.N

REG NO: 19EC07

ASSIGNMENT 4-BUZZER FOR ULTRASONIC SENSOR

SOURCE CODE:

```
int t=2;

int e=3;

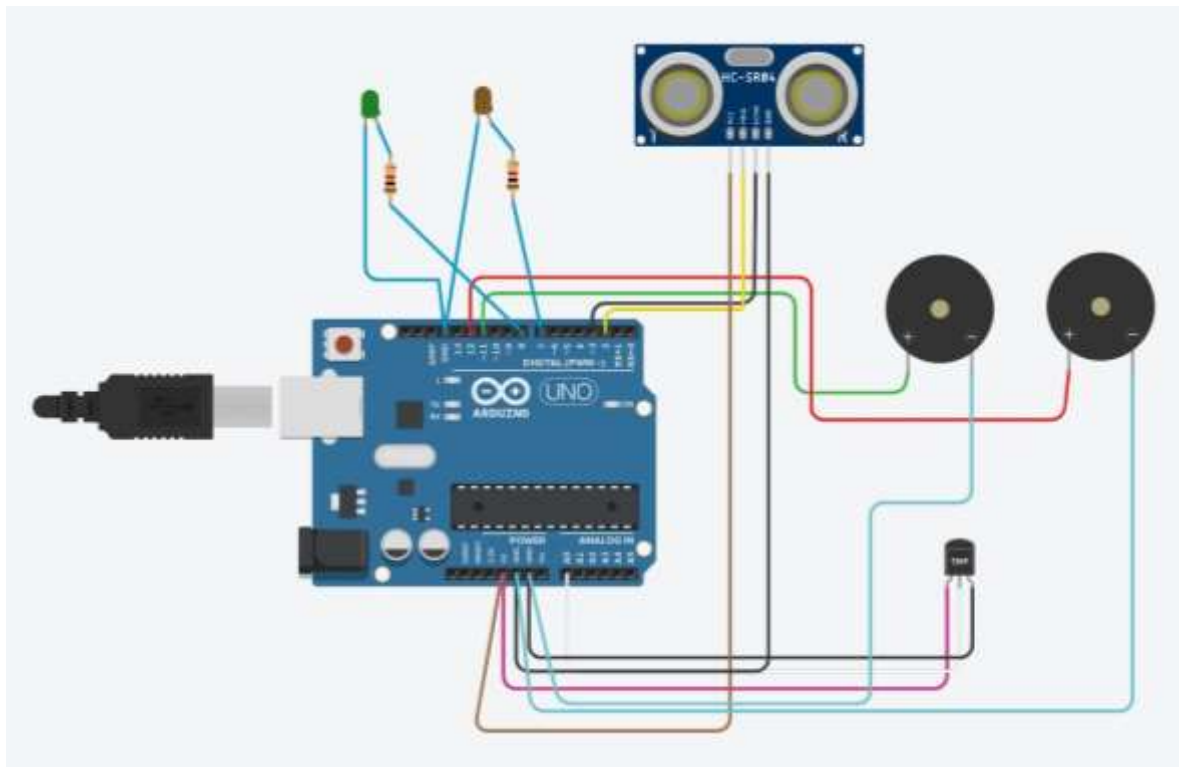
void setup()
{
  Serial.begin(9600);
  pinMode(t,OUTPUT
);
  pinMode(e,INPUT);
  pinMode(12,OUTPU
T);
}

void loop()
{
  //ultrasonic sensor
  digitalWrite(t,LOW);
  digitalWrite(t,HIGH);
  delayMicroseconds(1
0);
  digitalWrite(t,LOW);
```

```
float
dur=pulseIn(e,HIGH);
float dis=(dur*0.0343)/2;
Serial.print("Distance is:
");Serial.println(dis);

//LED ON
if(dis>=100)
{
    digitalWrite(8,HIGH);
    digitalWrite(7,HIGH);
}

//Buzzer For ultrasonic
Sensorif(dis>=100)
{
    for(int i=0; i<=30000; i=i+10)
    {
        tone(12,i);
        delay(1000);
    }
    noTone(12);
    delay(1000);
}
```



Name: KANIMOZHILM

REG NO: 19EC09

ASSIGNMENT 4-BUZZER FOR ULTRASONIC SENSOR

SOURCE CODE:

```
int t=2;

int e=3;


void setup()
{
  Serial.begin(9600);
  pinMode(t,OUTPUT
);
  pinMode(e,INPUT);
  pinMode(12,OUTPU
T);
}

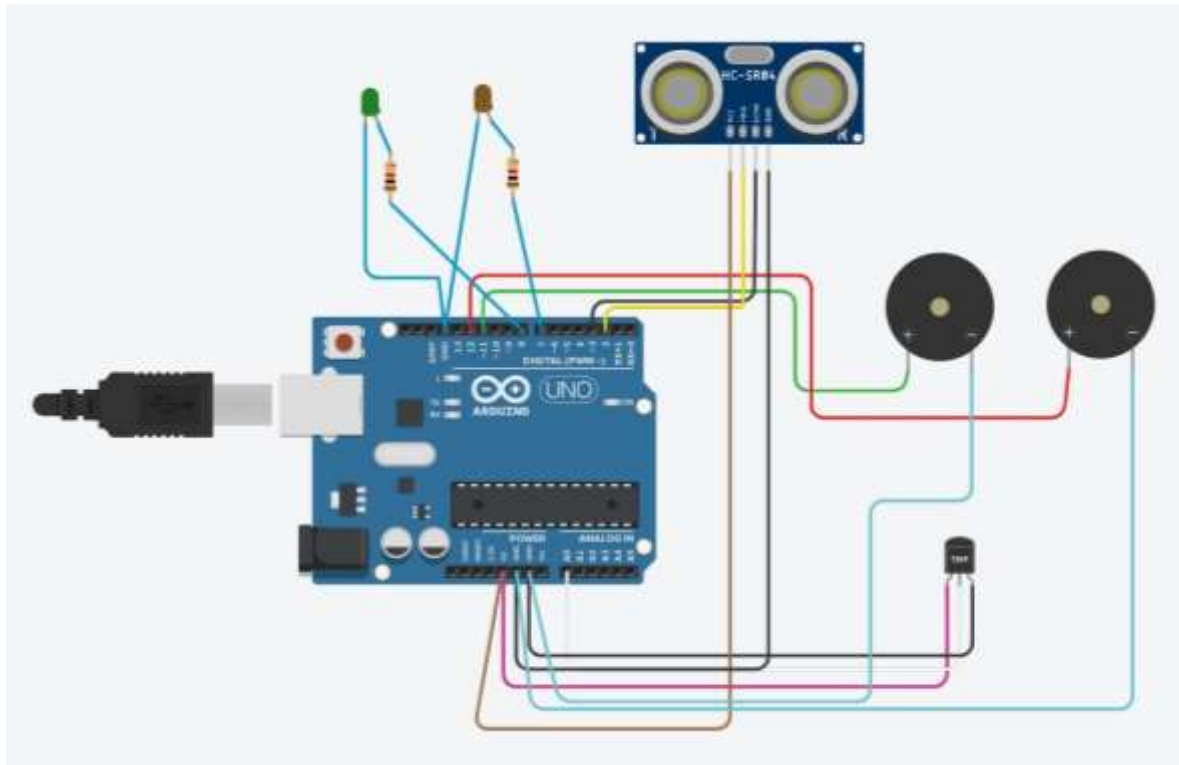

void loop()
{
  //ultrasonic sensor
  digitalWrite(t,LOW);
  digitalWrite(t,HIGH);
  delayMicroseconds(1
0);
  digitalWrite(t,LOW);
```



```
float
dur=pulseIn(e,HIGH);
float dis=(dur*0.0343)/2;
Serial.print("Distance is:
");Serial.println(dis);

//LED ON
if(dis>=100)
{
    digitalWrite(8,HIGH);
    digitalWrite(7,HIGH);
}

//Buzzer For ultrasonic
Sensorif(dis>=100)
{
    for(int i=0; i<=30000; i=i+10)
    {
        tone(12,i);
        delay(1000);
    }
    noTone(12);
    delay(1000);
}
```



Name: KANAGA.E

REG NO: 19EC08

ASSIGNMENT 4-BUZZER FOR ULTRASONIC SENSOR

SOURCE CODE:

```
int t=2;

int e=3;

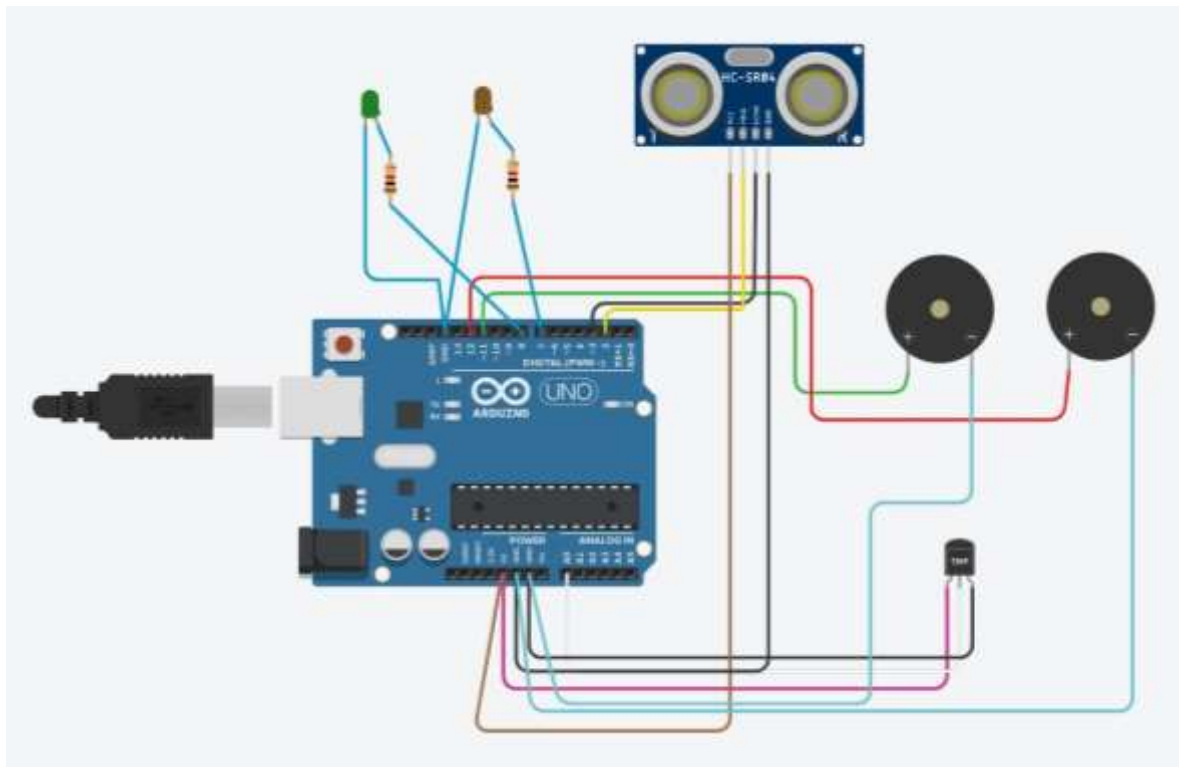
void setup()
{
  Serial.begin(9600);
  pinMode(t,OUTPUT
);
  pinMode(e,INPUT);
  pinMode(12,OUTPU
T);
}

void loop()
{
  //ultrasonic sensor
  digitalWrite(t,LOW);
  digitalWrite(t,HIGH);
  delayMicroseconds(1
0);
  digitalWrite(t,LOW);
```

```
float
dur=pulseIn(e,HIGH);
float dis=(dur*0.0343)/2;
Serial.print("Distance is:
");Serial.println(dis);

//LED ON
if(dis>=100)
{
    digitalWrite(8,HIGH);
    digitalWrite(7,HIGH);
}

//Buzzer For ultrasonic
Sensorif(dis>=100)
{
    for(int i=0; i<=30000; i=i+10)
    {
        tone(12,i);
        delay(1000);
    }
    noTone(12);
    delay(1000);
}
```



Name: PREETHIKA.S

REG NO: 19EC14

ASSIGNMENT 4-BUZZER FOR ULTRASONIC SENSOR

SOURCE CODE:

```
int t=2;

int e=3;


void setup()
{
  Serial.begin(9600);
  pinMode(t,OUTPUT
);
  pinMode(e,INPUT);
  pinMode(12,OUTPU
T);
}


void loop()
{
  //ultrasonic sensor
  digitalWrite(t,LOW);
  digitalWrite(t,HIGH);
  delayMicroseconds(1
0);
  digitalWrite(t,LOW);
```

```
float
dur=pulseIn(e,HIGH);
float dis=(dur*0.0343)/2;
Serial.print("Distance is:
");Serial.println(dis);

//LED ON
if(dis>=100)
{
digitalWrite(8,HIGH);
digitalWrite(7,HIGH);
}

//Buzzer For ultrasonic
Sensorif(dis>=100)
{
for(int i=0; i<=30000; i=i+10)
{
tone(12,i);
delay(1000);
noTone(12);
;
delay(1000);
}
}
```

