VSB ENGINEERING COLLEGE , KARUR

ELECTRONICS AND COMMUNICATION ENGINEERING

ASSIGNMENT - I

TITLE : Industry Specific Intelligent Fire Management System

NAME : Gunavathi S

DOMAIN NAME : Internet Of Things

MENTOR NAME : Janani S

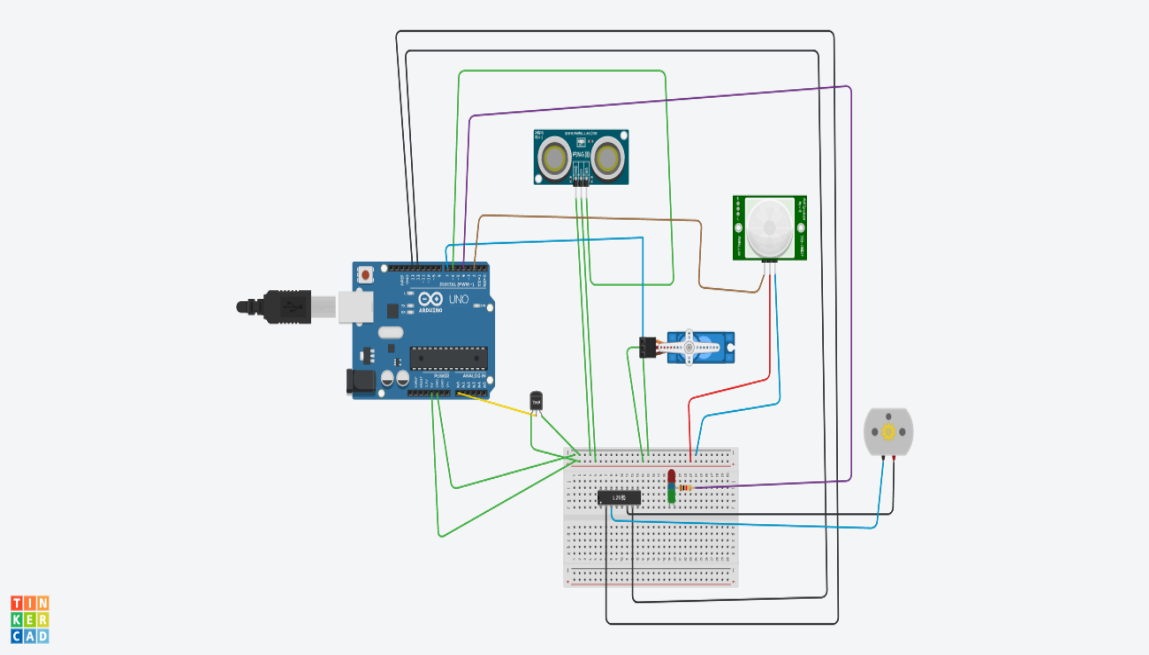
Assignment Topic :

Make a Smart Home in Tinkercad using 2+ sensors,LED,Buzzer in the single code and Circuit .

Required Materials :

- Arduino UNO R3
- Ultrasonic Distance Sensor
- PIR Sensor
- DC Motor
- Micro Servo
- LED
- Breadboard

Circuit Design :



Code :

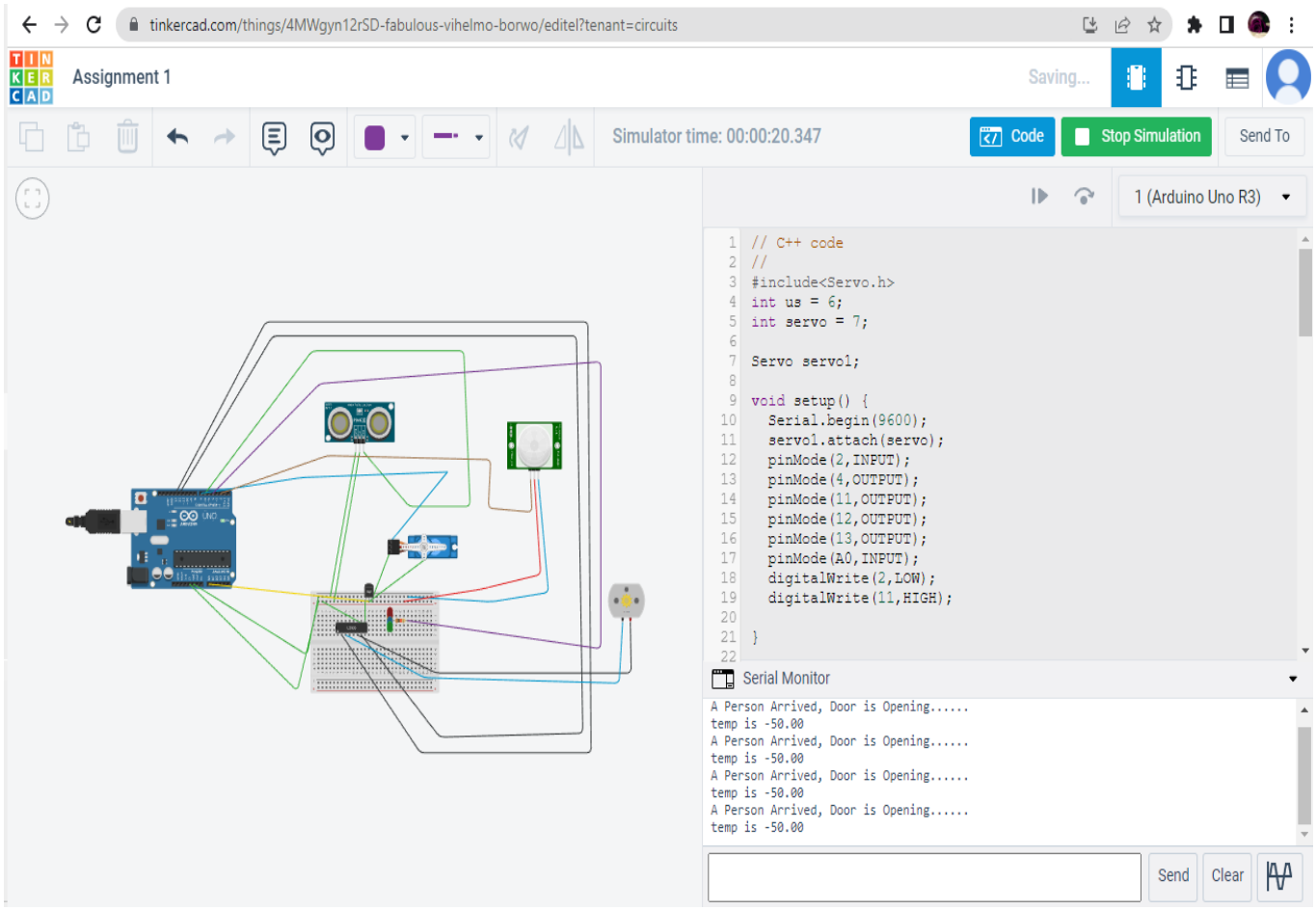
```
#include<Servo.h>
int us = 6;
int servo = 7;

Servo servo1;

void setup() {
  Serial.begin(9600);
  servo1.attach(servo);
  pinMode(2,INPUT);
  pinMode(4,OUTPUT);
```

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

}

void loop() {

  long duration, inches, cm;

  pinMode(us, OUTPUT);
  digitalWrite(us, LOW);
  delayMicroseconds(2);
  digitalWrite(us, HIGH);

  delayMicroseconds(5);

  digitalWrite(us, LOW);

  pinMode(us, INPUT);

  duration = pulseIn(us, HIGH);
  inches = microsecondsToInches(duration);
  cm = microsecondsToCentimeters(duration);

  servo1.write(0);
```

```
if(cm < 30)
{
  servo1.write(120);

  Serial.println("A Person Arrived, Door is Opening.....");
  delay(2000);
}
else
{
  servo1.write(0);
  Serial.println("Door is Closed.....");
}


int pir = digitalRead(2);

if(pir == HIGH)
{
  digitalWrite(4,HIGH);
  delay(3000);
}
else if(pir == LOW)
{
  digitalWrite(4,LOW);
}



float value=analogRead(A0);
```

```
  float temp=(((value/1024)*5.0199)-0.5)*100;


  Serial.print("temp is ");
  Serial.println(temp);
  delay(3000);


  if(temp > 20)
  {
    digitalWrite(12,HIGH);
    digitalWrite(13,LOW);
  }
  else
  {
    digitalWrite(12,LOW);
    digitalWrite(13,LOW);
  }
}

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

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

OUTPUT :


tinkercad.com/things/4MWgyn12rSD-fabulous-vihelmo-borwo/editel?tenant=circuits
Assignment 1
Saving...
Simulator time: 00:00:20.347
Code
Stop Simulation
Send To
1 (Arduino Uno R3)
// C++ code
//
#include<Servo.h>
int us = 6;
int servo = 7;
Servo servo1;
void setup() {
Serial.begin(9600);
servo1.attach(servo);
pinMode(2,INPUT);
pinMode(4,OUTPUT);
pinMode(11,OUTPUT);
pinMode(12,OUTPUT);
pinMode(13,OUTPUT);
pinMode(A0,INPUT);
digitalWrite(2,LOW);
digitalWrite(11,HIGH);
}
Serial Monitor
A Person Arrived, Door is Opening.....
temp is -50.00
A Person Arrived, Door is Opening.....
temp is -50.00
A Person Arrived, Door is Opening.....
temp is -50.00
A Person Arrived, Door is Opening.....
temp is -50.00
Send
Clear