

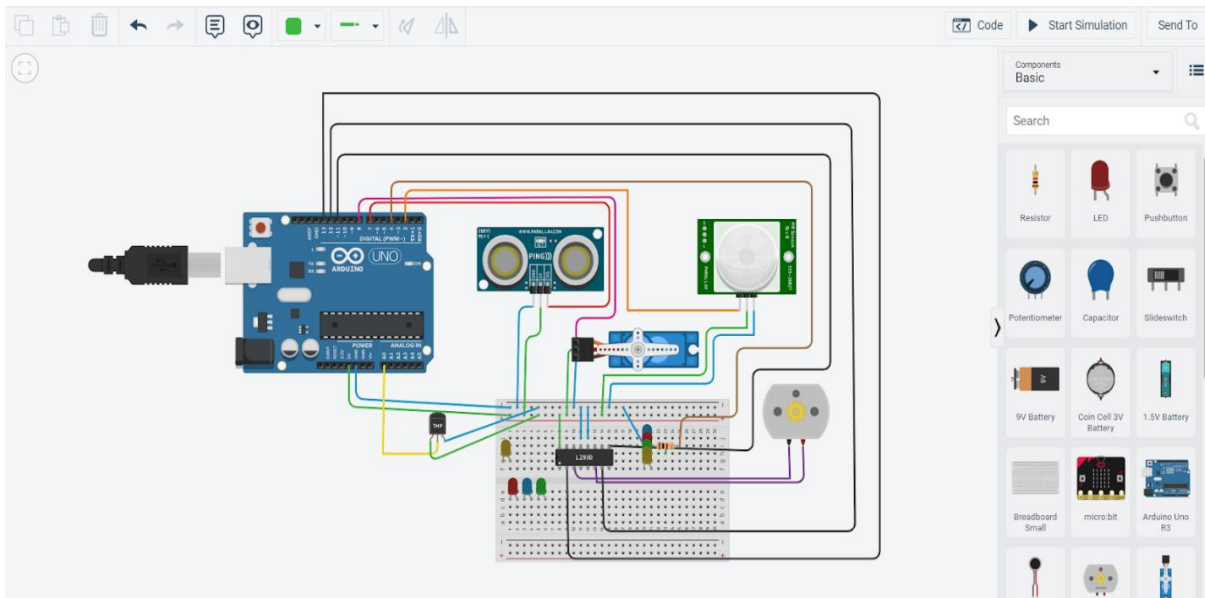
NALAIYA THIRAN

ASSIGNMENT-1

USER CASE: PERSONAL ASSISTANCE FOR SENIORS WHO ARE SELF RELIANT

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



CODE:

```
#include<Servo.h>
const int pingPin = 7;
int servoPin = 8;
Servo servo1;
void setup() {
  // initialize serial communication:
  Serial.begin(9600);
  servo1.attach(servoPin);
  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(pingPin, OUTPUT);
  digitalWrite(pingPin, LOW);
  delayMicroseconds(2);
  digitalWrite(pingPin, HIGH);
  delayMicroseconds(5);
  digitalWrite(pingPin, LOW);
  // The same pin is used to read the signal from the PING))) a HIGH pulse
  // whose duration is the time (in microseconds) from the sending of the ping
  // to the reception of its echo off of an object.
```

```

pinMode(pingPin, INPUT);
duration = pulseIn(pingPin, HIGH);
// convert the time into a distance
inches = microsecondsToInches(duration);
cm = microsecondsToCentimeters(duration);
//Serial.print(inches);
//Serial.print("in, ");
//Serial.print(cm);
//Serial.print("cm");
//Serial.println();
//delay(100);
servo1.write(0);
if(cm < 40)
{
    servo1.write(90);
    delay(2000);
}
else
{
    servo1.write(0);
}
// PIR with LED starts
int pir = digitalRead(2);
if(pir == HIGH)
{
    digitalWrite(4,HIGH);
    delay(1000);
}
else if(pir == LOW)
{
    digitalWrite(4,LOW);
}
//temp with fan
float value=analogRead(A0);
float temperature=value*0.48;

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

if(temperature > 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;
}

```