ASSIGNMENT 1

COURSE: Naan Mudhalvan (Internet of Things)

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Question:

Build a smart home in wokwi with minimum 2 sensors, Led buzzer.

Example: pir sensor for home security, servo motor for door lock system.

Requirement:

- Wokwi Platform

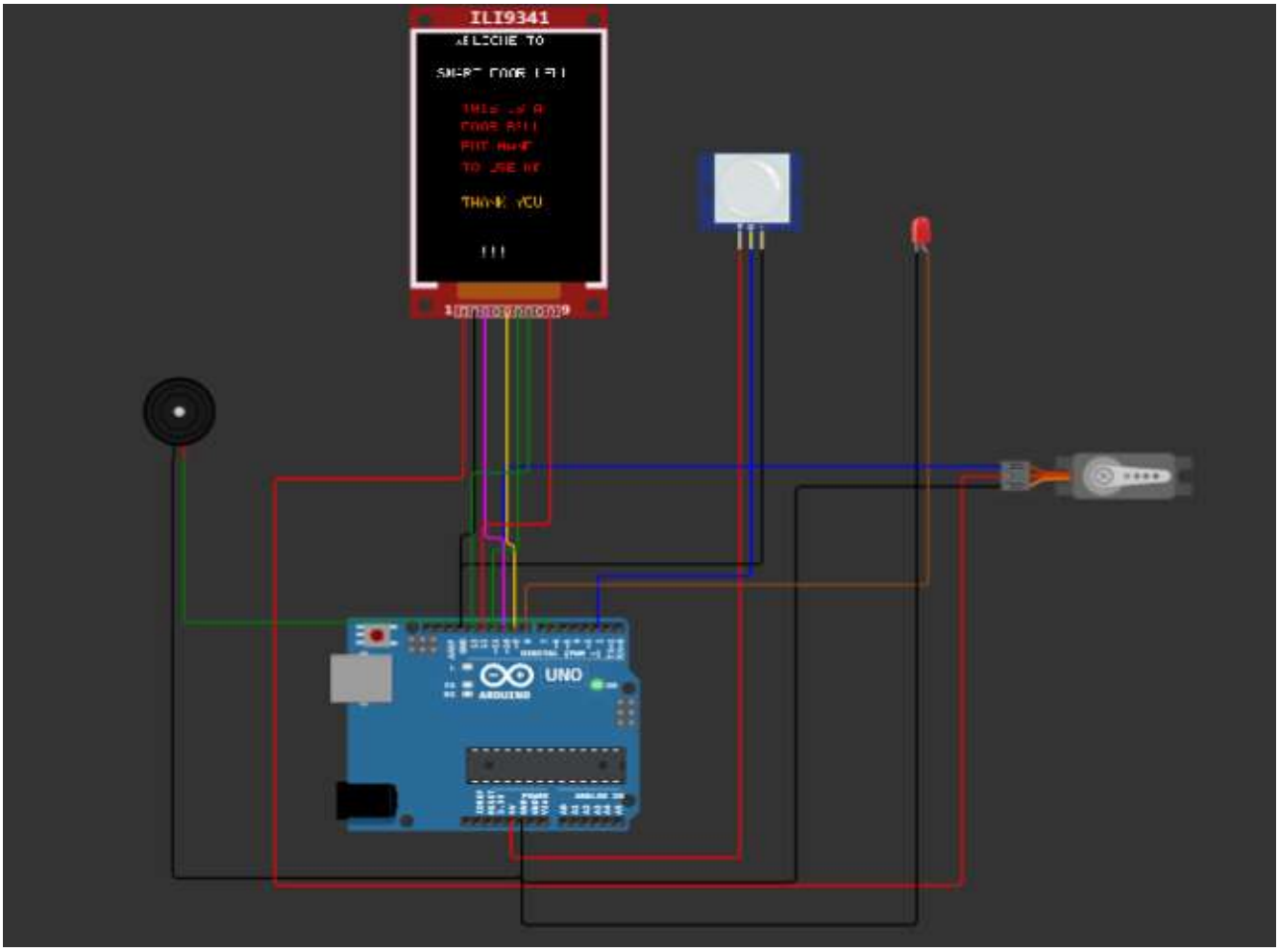
Wokwi Project Link:

https://wokwi.com/projects/364162831996738561

Components Required:

1.LCD-TFT display with SPI interface
2. A piezoelectric buzzer
3. Arduino Uno
4. Passive Infrared (PIR) motion sensor
5. Standard 5mm LED
6. A standard Micro Servo Motor

Connection:



SMART DOOR BELL SYSTEM

Installed Libraries:

- Adafruit ILI9341
- Servo

Code:

```
//include for the program

#include <Servo.h>
#include "SPI.h"
#include "Adafruit_GFX.h"
#include "Adafruit_ILI9341.h"
Servo myservo;
int pos = 0;

#define TFT_DC 9
#define TFT_CS 10
Adafruit_ILI9341 tft = Adafruit_ILI9341(TFT_CS, TFT_DC);
int ledPin = 8;
int inputPin = 2;
int pirState = LOW;
int val = 0;
int buzzer = 6;
void setup() {
```

```
pinMode(ledPin, OUTPUT);      // declare LED as output
pinMode(inputPin, INPUT);     // declare sensor as input
pinMode(buzzer, OUTPUT);
myservo.attach(10);

//tft screen display program(setup)
tft.begin();
tft.setCursor(25, 0);
tft.setTextColor(ILI9341_WHITE);
tft.setTextSize(2.5);
tft.println("  WELCOME TO");
tft.setCursor(13, 45);
tft.setTextColor(ILI9341_WHITE);
tft.setTextSize(2.5);
tft.println(" SMART DOOR BELL");
tft.setCursor(0, 95);
tft.setTextColor(ILI9341_RED);
tft.setTextSize(2.5);
tft.println("     THIS IS A");
tft.setCursor(0, 122);
tft.setTextColor(ILI9341_RED);
tft.setTextSize(2.5);
tft.println("     DOOR BELL");
tft.setCursor(0, 150);
tft.setTextColor(ILI9341_RED);
```

```
 tft.setTextSize(2.5);
 tft.println("     PUT HAND ");
 tft.setCursor(0, 180);
 tft.setTextColor(ILI9341_RED);
 tft.setTextSize(2.5);
 tft.println("     TO USE ME");
 tft.setCursor(0, 230);
 tft.setTextColor(ILI9341_ORANGE);
 tft.setTextSize(2.5);
 tft.println("     THANK YOU");
 tft.setCursor(0, 300);
 tft.setTextColor(ILI9341_WHITE);
 tft.setTextSize(2.5);
 tft.println("       !!! ");
}
 void loop() {
 val = digitalRead(inputPin);
  if (val == HIGH) {
    digitalWrite(ledPin, LOW);
    if (pirState == LOW) {
        for (pos = 0; pos <= 180; pos += 1) {
        // in steps of 1 degree
        myservo.write(pos);
        delay(15);
  }
```

```
      pirState = HIGH;

        tone(buzzer, 1000);
        digitalWrite(ledPin, HIGH);
        delay(1000);
        noTone(buzzer);
        digitalWrite(ledPin, LOW);
        delay(1000);
        tone(buzzer, 1000);
        digitalWrite(ledPin, HIGH);
        delay(1000);
        noTone(buzzer);
    }
  } else {
    digitalWrite(ledPin, LOW);
    if (pirState == HIGH) {
          for (pos = 180; pos >= 0; pos -= 1) {
            myservo.write(pos);
            delay(15);
          }
      pirState = LOW;
    }
  }
}
```