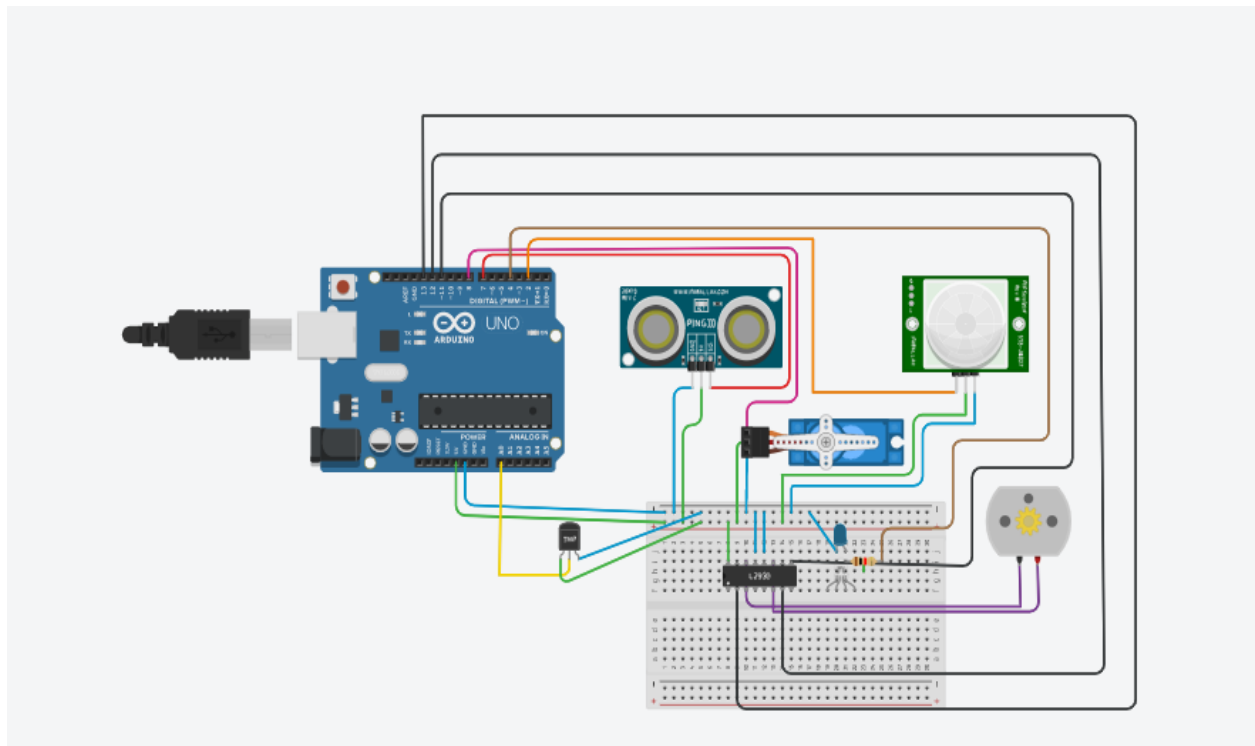


ASSIGNMENT 1

Statement:

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

Solution:



Code:

```
#include<Servo.h>

const int pingPin = 7;

int servoPin = 8;

Servo servo1;

void setup() {
  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);

  pinMode(pingPin, INPUT);
  duration = pulseIn(pingPin, HIGH);

  inches = microsecondsToInches(duration);
```

```
cm = microsecondsToCentimeters(duration);
```

```
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;
}
```

OUTPUT:

TINKER C.A.D. Copy of Home automation system

All changes saved

Simulator time: 00:00:30

Code Stop Simulation Send To

1 (Arduino Uno R3)

```
1 #include<Servo.h>
2 const int pingPin = 7;
3 int servoPin = 8;
4
5 Servo servol;
6
7 void setup() {
```

Serial Monitor

temperature
73.44
temperature
121.92
temperature
121.92
temperature
121.92
temperature
121.92
temperature
121.92
temperature
121.92
temperature
121.92
temperature
121.92
temperature
121.92

Send Clear