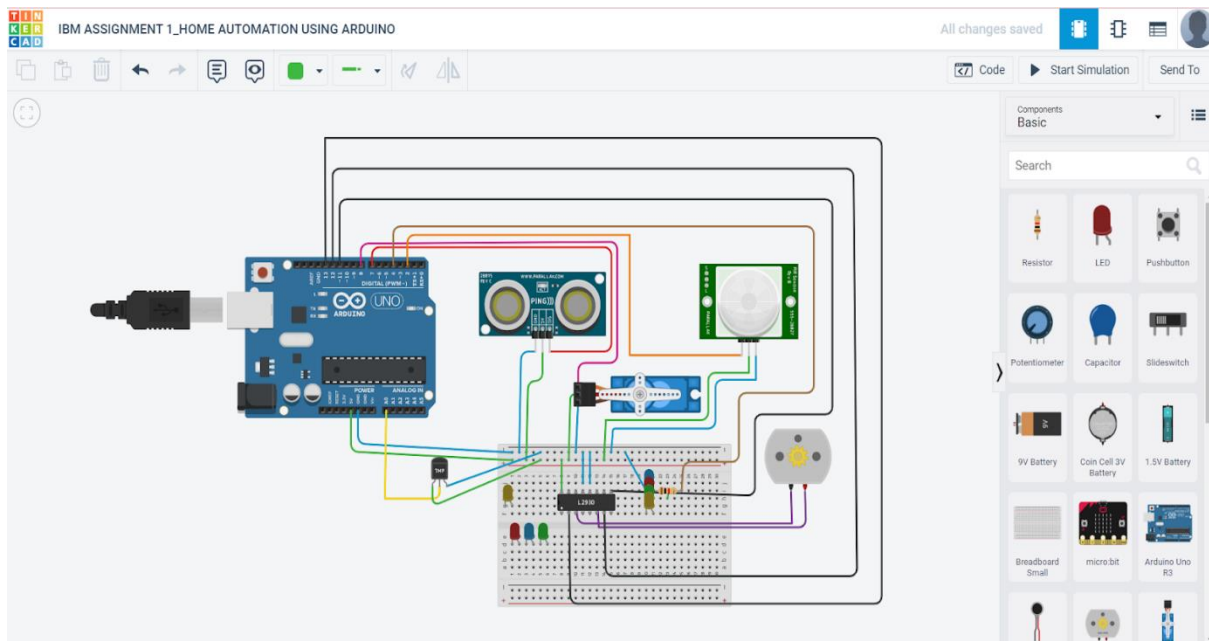


# ASSIGNMENT 1

## SMART HOME IN TINKERCAD

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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;  
}
```