

## ASSIGNMENT – 1

## BUILD A SMART HOME IN THINKERCAD

Assignment date	26 September 2022
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Maximum marks	2 marks

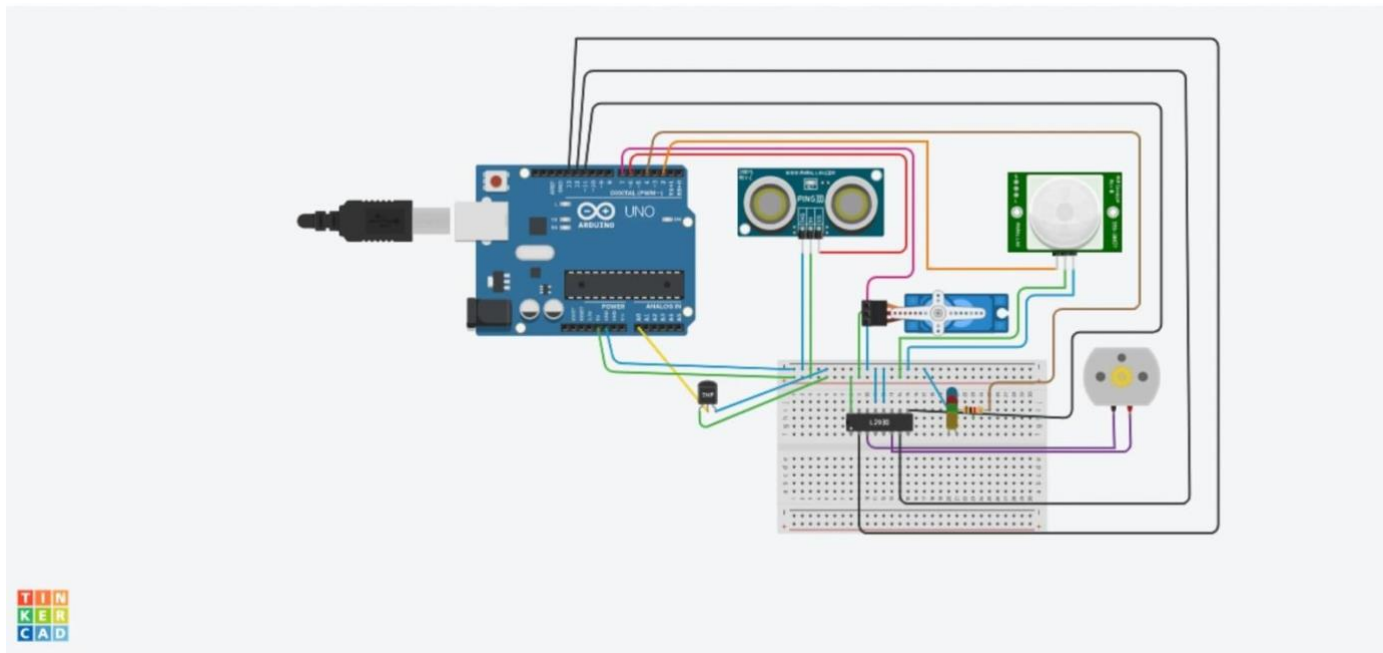
**QUESTION -1:**

## Build a smart home in thinkercad

Use atleast 2 sensor, led, buzzer in a circuit. Stimulate in a single code.

**Solution:**

## CIRCUIT



**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)
```

```
n); cm =  
microsecondsToCentimeters(d  
uration);
```

```
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;  
}
```

