**Assignment -1**

Tinkercad

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| Assignment Date | 7 September 2022 |
| Student Name | Mr. Sudarshan A R |
| Student Roll Number | 2019504594 |
| Maximum Marks | 2 Marks |

**Question-1:**

Simple home automation system using Arduino on Tinkercad.

## Solution:

#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);

}

int pir = digitalRead(2);

if(pir == HIGH)

{

digitalWrite(4,HIGH);

delay(1000);

}

else if(pir == LOW)

{

digitalWrite(4,LOW);

}

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) {

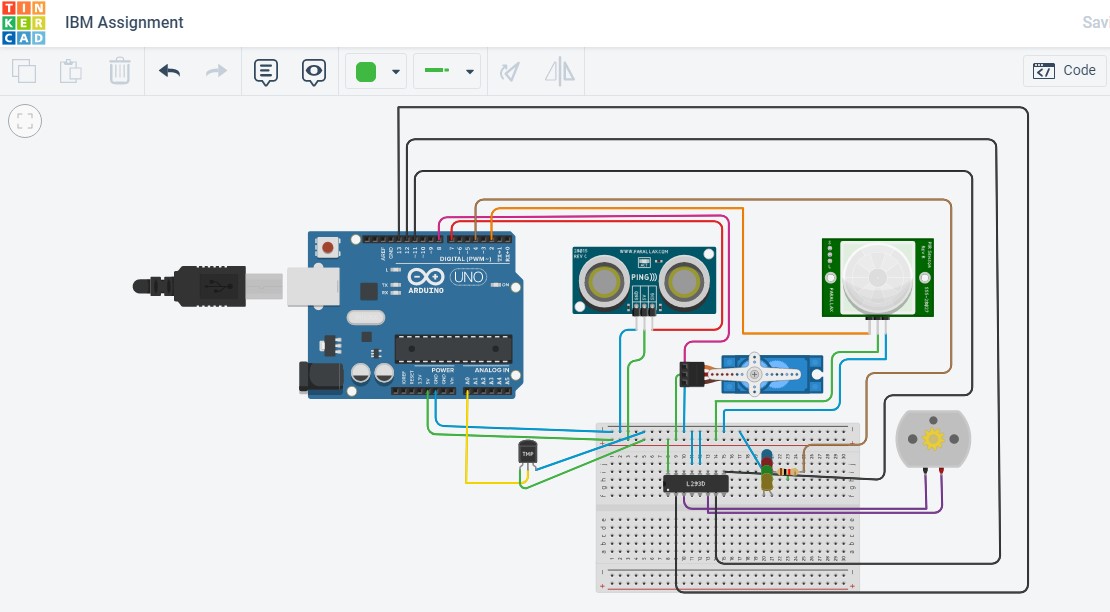
return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds) {

return microseconds / 29 / 2;

}

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