ASSIGNMENT

MAHENDRA INSTITUTE OF TECHNOLOGY

(Autonomous)

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CLASS:4 YEAR ECE

SUBJECT: IBM

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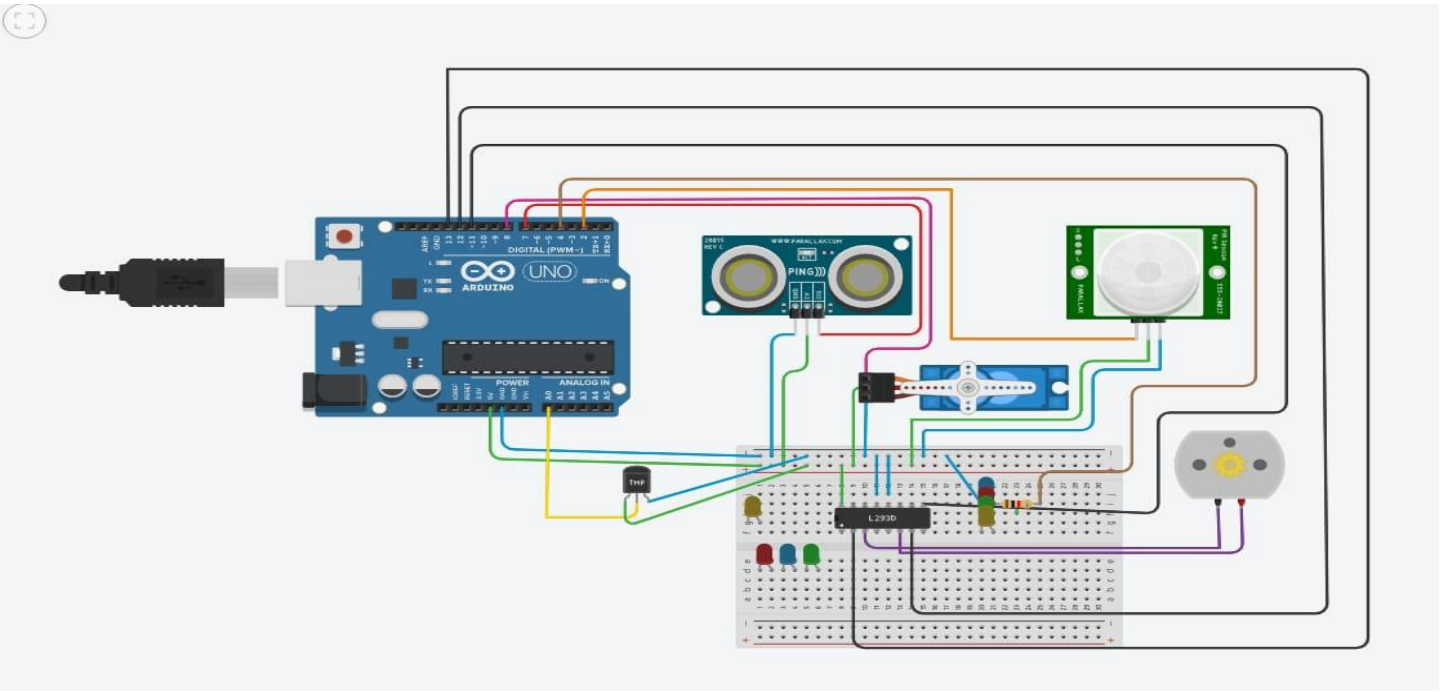
DESIGN PART



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CODING PART

```
#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;
}
import random
temperature=random.randint(1,100)
humidity=random.randint(1,50)
print(temperature)
print(humidity)
if((temperature<45)&(humidity<35)):
   print("Temperature is normal")
   print("Humidity is normal")
elif((temperature>45)&(humidity<35)):
   print("Temperature is high")
   print("Humidity is low")
```

```
elif((temperature<45)&(humidity>35)):
    print("Temperature is low")
    print("Humidity is high")
elif((temperature>45)&(humidity>35)):
    print("Temperature is high")
    print("Humidity is high")
else:
    print("Temperature is very low")
    print("Humidity is very low")
    print("Alarm off")
```