**IBM – NALAYA THIRAN PROJECT**

**ASSIGNMENT 1**

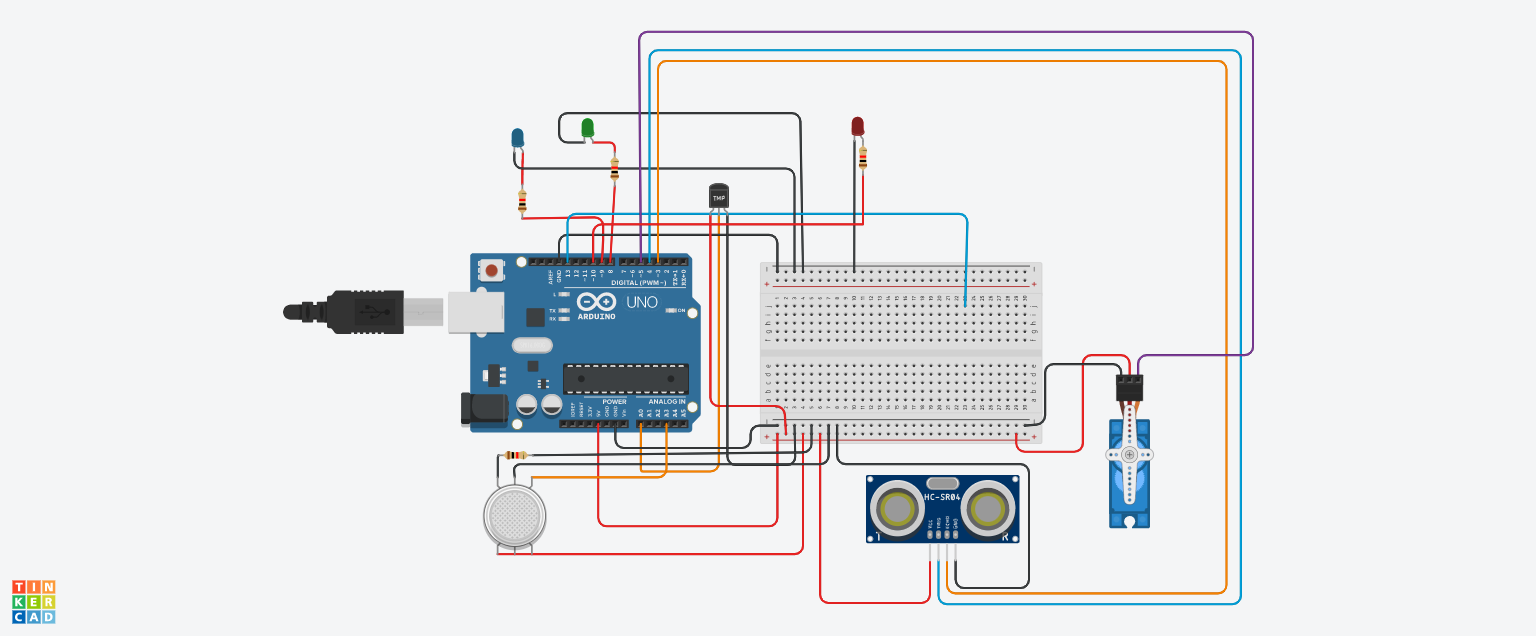
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**Circuit Diagram**



**Code**

// C++ code

//

void setup()

{

Serial.begin(9600);

pinMode(3,INPUT);//Echo from ultrasonic sensor

pinMode(4,OUTPUT); //Trigger for ultrasonic sensor

pinMode(5,OUTPUT); //Output to servo motor

pinMode(8,OUTPUT);//Green LED to indicate decrease in temperature

pinMode(9,OUTPUT);//Blue LED to indicate increase in temperature

pinMode(10,OUTPUT);//Red LED to indicate gas leakage

}

void loop()

{

// Getting the data from the Temperature sensor

double a = analogRead(A0);

// Converting Analog value to Digital Value

double Conv = (((a/1024)\*5)-0.5)\*100;

Serial.println("The Temperature is :");

Serial.println(Conv);

Serial.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

delay(1000);

if(Conv>30)

{

digitalWrite(9,HIGH);

digitalWrite(8,LOW);

}

else

{

digitalWrite(8,HIGH);

digitalWrite(9,LOW);

}

//Ultrasonic sensor

digitalWrite(4,HIGH);

digitalWrite(5,LOW);

delayMicroseconds(10);

digitalWrite(4,LOW);

int time=pulseIn(3,HIGH);

int distance=(time\*0.034)/2;

Serial.println("Distance is:");

Serial.println(distance);

if(distance<=20)

{

Serial.println("Person detected");

digitalWrite(5,HIGH);

delay(500);

}

else

{

digitalWrite(5,LOW);

delay(500);

}

//Gas sensor

int gas = analogRead(A3);

Serial.println("The value of gas leakage is:");

Serial.println(gas);

int thres = 150;

if(gas > thres)

{

digitalWrite(10,HIGH);

}

}