Problem Statement :

lo T-Based Industry - Real-Time River Water Quality
Monitoring and Control
System
Domain :
Internet of Things
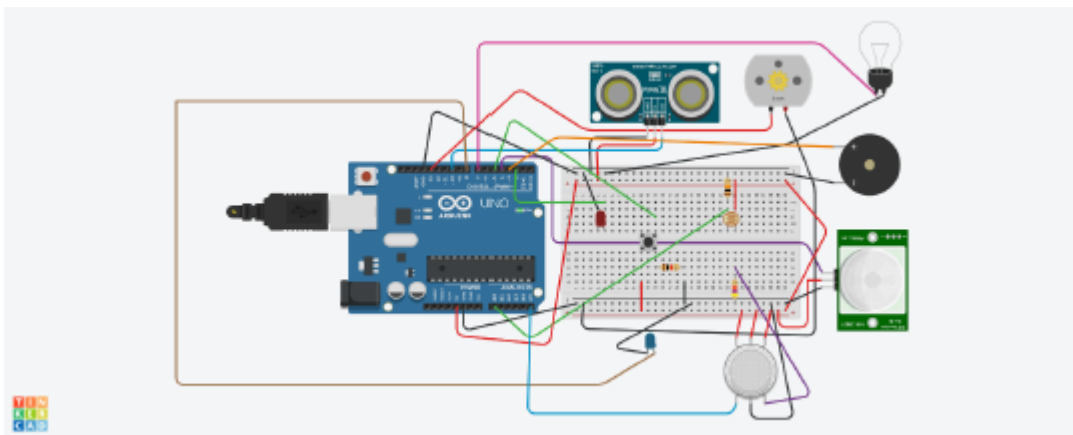
Assignment Date	15 September 2022
Student Name	CHRIS JOEL S
Student Roll Number	412519205026
Maximum Marks	2 Marks

Assignment 1 : Circuit design Home automation system in TinkerCad.

https://www.tinkercad.com/things/9ylzaArYyOz-Home-Automation/
editel?tenant=circuits

Circuit diagram :

Program:

Arduino Uno Code : const int pingPin = 10;

```cpp
const int ledUS = 2;

const int light = 7;

const int pir = 4; #define photoSensor AO

#define buzzer 3 int const PINO_SGAS = A5;

int const ledGas = 8; int const button = 5; int const motor

= 13;

void setup()

pinMode(ledUS, OUTPUT); pinMode(light,

OUTPUT);

pinMode(buzzer, OUTPUT); pinMode(ledGas,

OUTPUT); pinMode(motor, OUTPUT);

pinMode(pir, INPUT);

pinMode(button,

INPUT);

pinMode(photoSensor,

INPUT);

Serial.begin(9600);

void

loop()

long duration, cm; int valLight =

analogRead(photoSensor); int

valPIR= digitalRead(pir); int valGAS =

analogRead(PINO_SGAS); valGAS =

map(valGAS, 300, 750, 0, 100); int

valBt = digitalRead(button);
```

```
pinMode(pingPin, OUTPUT);

digitalWrite(pingPin, LOW);

delayMicroseconds(2);

digitalWrite(ping Pin, HIGH);

delayMicroseconds(5);

digitalWrite(ping Pin, LOW);

pinMode(pingPin, INPUT); duration

= pulseln(pingPin, HIGH); cm =

microsecondsToCentimeters(duratio

n); if(cm <336){

digitalWrite(ledUS,

HIGH); }else{

digitalWrite(ledUS,

LOW);

if(valLight <

890){

digitalWrite(light,

HIGH);

}else{

digitalWrite(light,

LOW);

if(valPIR ==

1){

digitalWrite(buzzer,

HIGH);
```

```arduino
}else{

digitalWrite(buzzer, LOW);

if(valBt ==

1){

digitalWrite(motor

motor,

HIGH); }else{

digitalWrite(motor,

LOW);

if(valGAS >

20){

digitalWrite(ledGas,

HIGH); }else{

digitalWrite(ledGas

ledGas,

LOW);

Serial.print(val

PIR);

Serial.println();

long microsecondsToCentimeters(long

microseconds) {

return microseconds / 29 / 2;

}
```