Problem Statement :

Io T-Based Industry - Real-Time River Water Quality
Monitoring and Control
System

Domain :

Internet of Things

Assignment 1 : Circuit design Home
automation system in TinkerCad

By,

A.Vijay-720819106109

Veerasekhar-720819106107

Varsha-720819106106

Vignesh.M-720819106108

Link : https://www.tinkercad.com/things/70c5CpO2g5C-home-automation/editel

Circuit diagram :

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Arduino Uno Code : const int pingPin = 10;

```
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
  = pulseIn(pingPin, HIGH); cm =
  microsecondsToCentimeters(duratio
  n); if(cm <336){

  digitalWrite(ledUS,
  HIGH); }else{
```

```arduino
  digitalWrite(ledUS,
  LOW);


if(valLight <
890){

  digitalWrite(light,
  HIGH);
```

```arduino
}else{

  digitalWrite(light,
  LOW);


if(valPIR ==
1){

  digitalWrite(buzzer,
  HIGH);
}else{

  digitalWrite(buzzer, LOW);


if(valBt ==
1){
```

```
    digitalWrite(motor,
    HIGH); }else{

     digitalWrite(motor,
     LOW);


    if(valGAS >
    20){

    digitalWrite(ledGas,
    HIGH); }else{

     digitalWrite(ledGas,
     LOW);


     Serial.print(val
     PIR);
     Serial.println();


long microsecondsToCentimeters(long
microseconds) {

 return microseconds / 29 / 2;
```

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