

### Assignment -1

Problem Statement :

Io T-Based Industry - Real-Time River Water Quality

Monitoring and Control

System

Domain :

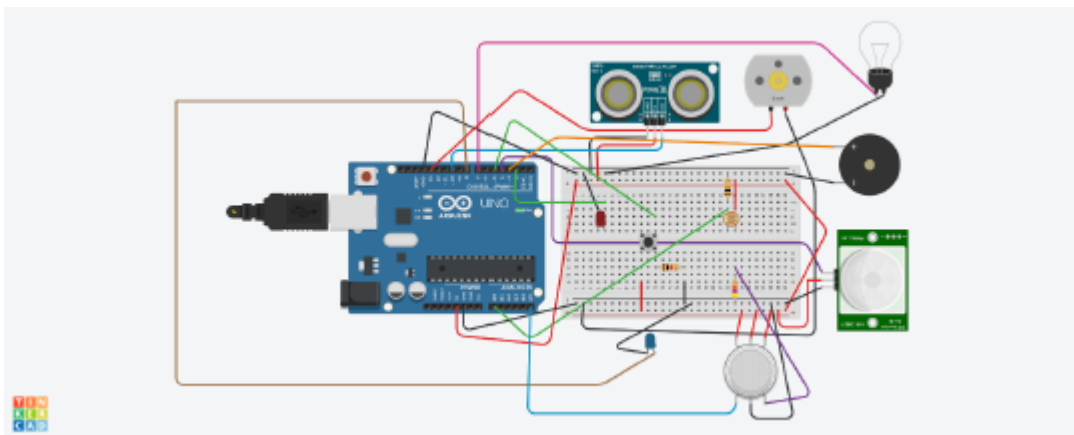
Internet of Things

Assignment Date	15 September 2022
Student Name	Hemanth Kumar G P S
Student Roll Number	412519205051
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;`

```

const int ledUS = 2;

const int light = 7;

const int pir = 4; #define photoSensor A0

#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{

digitalWrite(ledUS,

LOW);

if(vallLight <

890){

digitalWrite(light,

HIGH);

}else{

digitalWrite(light,

LOW);

if(valPIR ==

1){

digitalWrite(buzzer,

HIGH);

```

```

}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;

}

```