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

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

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Circuit diagram :

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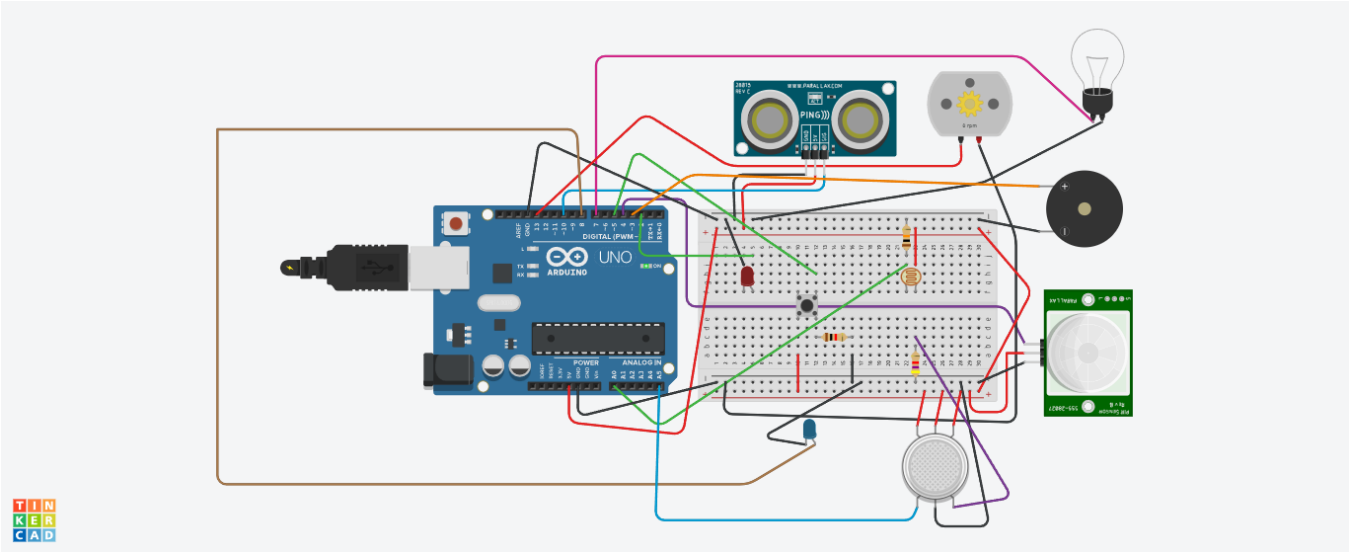

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ANALOG IN

TIN KER CAD

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{
  digitalWrite(ledUS,
  LOW);


if(valLight <
890){
  digitalWrite(light,
  HIGH);
```



```
}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;
```