Real-Time River Water Quality Monitoring and Control System

Domain: Internet of Things

ASSIGNMENT 1

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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(pingPin, HIGH);

delayMicroseconds(5);

digitalWrite(pingPin, LOW);

pinMode(pingPin, INPUT);

duration = pulseIn(pingPin, HIGH);

cm = microsecondsToCentimeters(duration);

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(valPIR);

  Serial.println();

}

long microsecondsToCentimeters(long microseconds)

 { return microseconds / 29 / 2;

}
```

Simulation :