Problem Statement :

IoT-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,

Sigireddy Uday Kiran - 720819106094

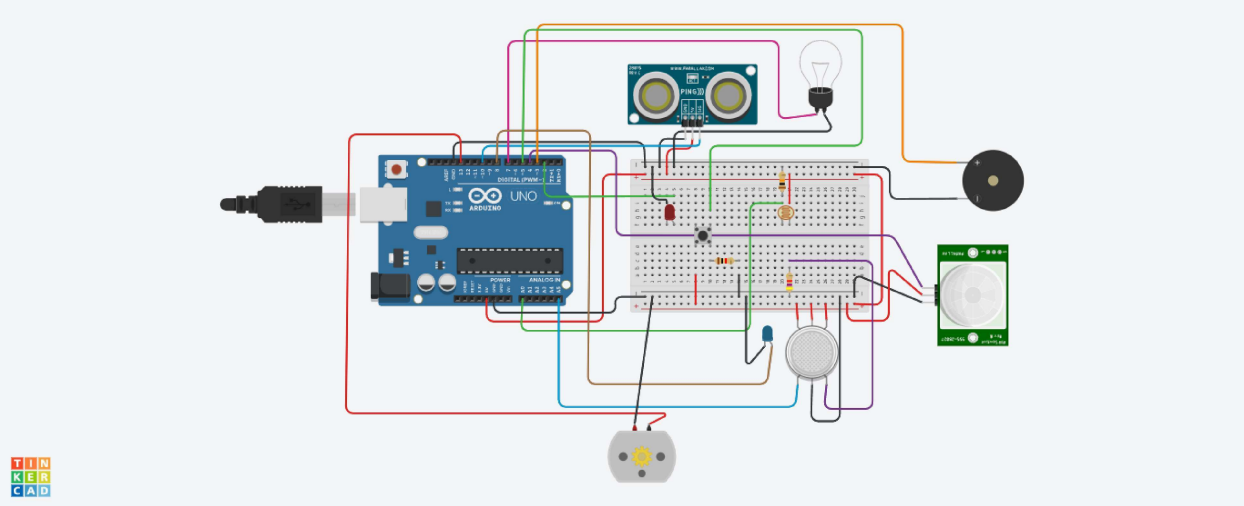
Shajudeen - 720819106093

Sundi Ricky Paul - 720819106095

Suriyan - 720819106096

Link : https://www.tinkercad.com/things/7Oc5CpO2g5C-home-automation/editel

Circuit diagram :



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(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;
}
```