

## **PROBLEM STATEMENT :**

Real-Time River Water Quality Monitoring and Control System

## **DOMAIN :**

Internet of Things

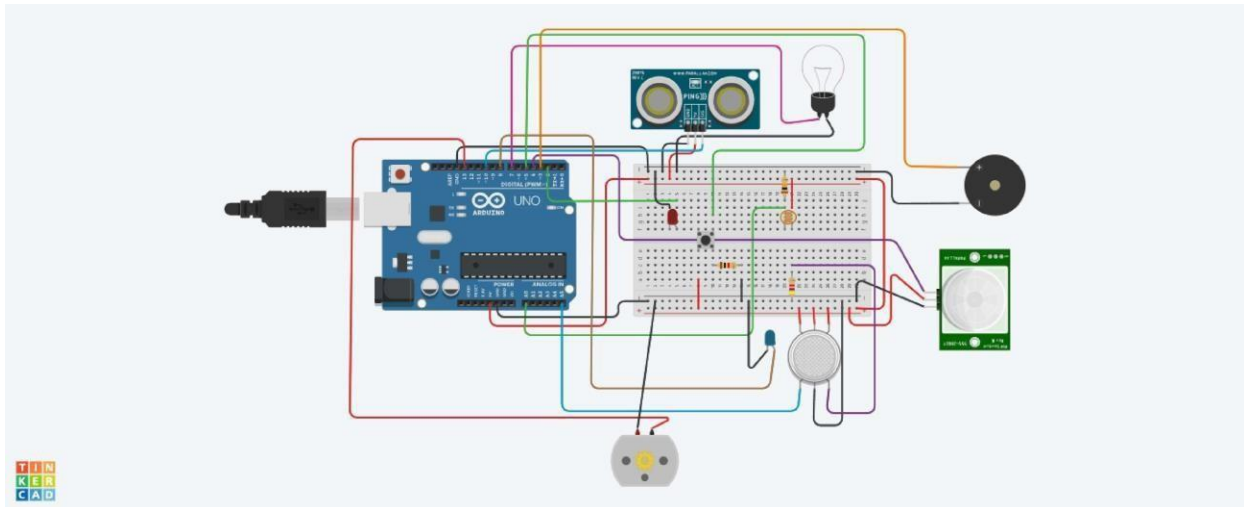
## **ASSIGNMENT 1 :**

Smart home with at least two sensors and led, buzzer in TinkerCad

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## CIRCUIT DIAGRAM :



## ARDUINO UNO CODE:

```
const int pingPin = 10;
const int ledUS = 2;
const int led = 7;
const int pirsensor = 4;
#define photoSensor A0
#define sound 3
int const PINO_SGAS = A5;
int const ledGas = 8;
int const button = 5;
int const motor = 13;

void setup()
{
  pinMode(ledUS, OUTPUT);
  pinMode(led, OUTPUT);
  pinMode(sound, OUTPUT);
  pinMode(ledGas, OUTPUT);
  pinMode(motor, OUTPUT);
  pinMode(pirsensor, INPUT);
  pinMode(button, INPUT);
  pinMode(photoSensor, INPUT);
```

```
Serial.begin(9600);  
}
```

```
void loop()  
{  
  long duration, cm;  
  int valLight = analogRead(photoSensor);  
  int valPIR= digitalRead(pirsensor);  
  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(led, HIGH);  
  }else{  
    digitalWrite(led, LOW);  
  }  
  
  if(valPIR == 1){
```

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