PROJECT DEVELOPMENT PHASE

SPRINT 2

Date	05 November 2022
Project Title	Gas Leakage Monitoring and Alerting System
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In Sprint 2, the sensor value is above 500, it will check the gate condition whether it is open or close.

The Servo motor controls the knob of the gate.

If the value is above the threshold, it will send the message “Gas Detected”

CODE:

```
#include<Servo.h>

#include <TinyGPS++.h>

#include <SoftwareSerial.h>

#include<LiquidCrystal_I2C.h>

LiquidCrystal_I2C lcd(32, 16, 2);

int GPSBaud = 9600;

TinyGPSPlus gps;

SoftwareSerial sgps(13, 15); //Rx ,  Tx gps

SoftwareSerial sgsm(3, 1); // Rx ,  Tx gsm

#define KNOB 3

#define LEVER 2

Servo myservo;
```

```
int gas = A5;
int sensorValue = 0;
bool gateClosed = true;



void setup()
{
  Serial.begin(9600);
  pinMode(LEVER, INPUT);
  myservo.attach(KNOB);
  myservo.write(90);
  sgsm.begin(9600);
  sgps.begin(9600);
  lcd.init();
  lcd.clear();
  lcd.backlight();
  lcd.setCursor(3,0);
  lcd.print("GAS LEAKAGE");
  lcd.setCursor(4,1);
  lcd.print("DETECTION");
  delay(3000);
  lcd.clear();
  lcd.setCursor(0,0);
  lcd.print("Gas Value: ");
}
```

```
void loop()
{
  sensorValue = analogRead(gas);
  Serial.println(sensorValue);
  if(sensorValue > 500 && !gateClosed)
  {
    Serial.println("GAS DETECTED");
    lcd.setCursor(0,1);
    lcd.print("GAS DETECTED  ");
    sendSMS("GAS IS DETECTED!!");
    myservo.write(90);
    gateClosed = true;
    sendSMS("THE KNOB IS CLOSED");
    lcd.setCursor(0,1);
    lcd.print("KNOB IS CLOSED");
    delay(1000);
  }
  else if(sensorValue > 500 && gateClosed)
  {
    Serial.println("GAS DETECTED");
    lcd.setCursor(0,1);
    lcd.print("GAS DETECTED  ");
    sendSMS("GAS IS DETECTED!!");
    sendSMS("THE KNOB IS ALREADY CLOSED");
```

```
    lcd.setCursor(0,1);
    lcd.print("KNOB IS CLOSED");
    delay(1000);
  }
  else
  {
    byte buttonState = digitalRead(LEVER);
    if(buttonState == HIGH)
    {
      myservo.write(0);
      gateClosed = false;
      Serial.println("GATE IS OPENED");
    }
    else
    {
      myservo.write(90);
      gateClosed = true;
      Serial.println("GATE IS CLOSED");
    }
  }
}
void sendSMS(char*message)
{
  while (sgps.available() > 0)
    if (gps.encode(sgps.read()))
```

```
    {
      if (gps.location.isValid())
      {
        sgsm.listen();
        sgsm.print("\r");
        delay(1000);
        sgsm.print("AT+CMGF=1\r"); // AT COMMAND TO SEND SMS
        delay(1000);
        /*Replace XXXXXXXXXX to 10 digit mobile number &
        ZZ to 2 digit country code*/
        sgsm.print("AT+CMGS=\"+919025681637\"\r"); // REGISTERED
NUMBER TO SEND SMS
        delay(1000);
        //The text of the message to be sent.
        sgsm.print(message);
        sgsm.print("https://www.google.com/maps/?q="); // MAPS
        sgsm.print(gps.location.lat(), 6); // LAT
        sgsm.print(",");
        sgsm.print(gps.location.lng(), 6); // LONG    delay(1000);
        sgsm.write(0x1A);
        delay(1000);
      }
    }
}
```

Thus Sprint 2 is successfully completed.