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DESIGNATION:TEAM LEAD

PROJECT TITLE:SMART SOLUTION FOR RAILWAYS

```
#include <Servo.h>
Int output1Value = 0;
Int sen1Value = 0;
Int sen2Value = 0;
Int const gas_sensor = A1;
Int const LDR = A0;
Int limit = 400;

Long readUltrasonicDistance(int triggerPin, int echoPin)
{
        pinMode(triggerPin, OUTPUT);
        digitalWrite(triggerPin, LOW);
        delayMicroseconds(2);

// Sets the trigger pin to HIGH state for 10 microseconds
digitalWrite(triggerPin, HIGH);   delayMicroseconds(10);
digitalWrite(triggerPin, LOW);   pinMode(echoPin,
INPUT);

 // Reads the echo pin, and returns the sound wave travel time in microseconds
 Return pulseIn(echoPin, HIGH);
}

Servo servo_7;

Void setup()
```

```
{
  Serial.begin(9600);                 //initialize serial communication
pinMode(A0, INPUT);     //LDR
 pinMode(A1,INPUT);                 //gas sensor   pinMode(13,
OUTPUT);                    //connected to relay

 servo_7.attach(7, 500, 2500); //servo motor


 pinMode(8,OUTPUT);                 //signal to piezo buzzer
 pinMode(9, INPUT);                 //signal to PIR
 pinMode(10, OUTPUT);               //signal to npn as switch
 pinMode(4, OUTPUT);                //Red LED
 pinMode(3, OUTPUT);                //Green LED

}


Void loop()
{
   Int val1 = analogRead(LDR);
 If (val1 > 500)
          {
          digitalWrite(13, LOW);
   Serial.print("Bulb ON = ");
   Serial.print(val1);
          }
 Else
          {
          digitalWrite(13, HIGH);
```

```
    Serial.print("Bulb OFF = ");
   Serial.print(val1);
          }


  Sen2Value = digitalRead(9);
  If (sen2Value == 0)
          {
          digitalWrite(10, LOW); //npn as switch OFF        digitalWrite(4,
HIGH); // Red LED ON,indicating no motion        digitalWrite(3, LOW);
//Green LED OFF, since no Motion detected

    Serial.print("    || NO Motion Detected    " );
          }


  If (sen2Value == 1)
          {
          digitalWrite(10, HIGH);//npn as switch ON     delay(3000);
digitalWrite(4, LOW); // RED LED OFF                digitalWrite(3,
HIGH);//GREEN LED ON , indicating motion detected

    Serial.print("    || Motion Detected!     " );
          }
  Delay(300);


Int val = analogRead(gas_sensor);     //read sensor value
  Serial.print("|| Gas Sensor Value = ");
  Serial.print(val);                                    //Printing in serial monitor
//val = map(val, 300, 750, 0, 100);
  If (val > limit)
```

```
        {
        Tone(8, 650);
        }
        Delay(300);
noTone(8);

  Sen1Value = 0.01723 * readUltrasonicDistance(6, 6);


 If (sen1Value < 100)
        {
        Servo_7.write(90);
   Serial.print("    || Door Open!  ; Distance = ");
   Serial.print(sen1Value);
  Serial.print("\n");


        }
 Else
        {
        Servo_7.write(0);
   Serial.print("    || Door Closed! ; Distance =  ");
   Serial.print(sen1Value);
   Serial.print("\n");
 }
 Delay(10); // Delay a little bit to improve simulation performance
```

- }