

Problem Statement :

Smart solution for Railways

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(valPI
R);
Serial.println();
}

long microsecondsToCentimeters(long
microseconds) { return microseconds / 29 / 2;
}

```

Simulation :

