- **PROBLEM STATEMENT :**

  IoT Based Smart Solution For Railways

- **DOMAIN :**

  Internet of Things

- **ASSIGNMENT 1:**

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

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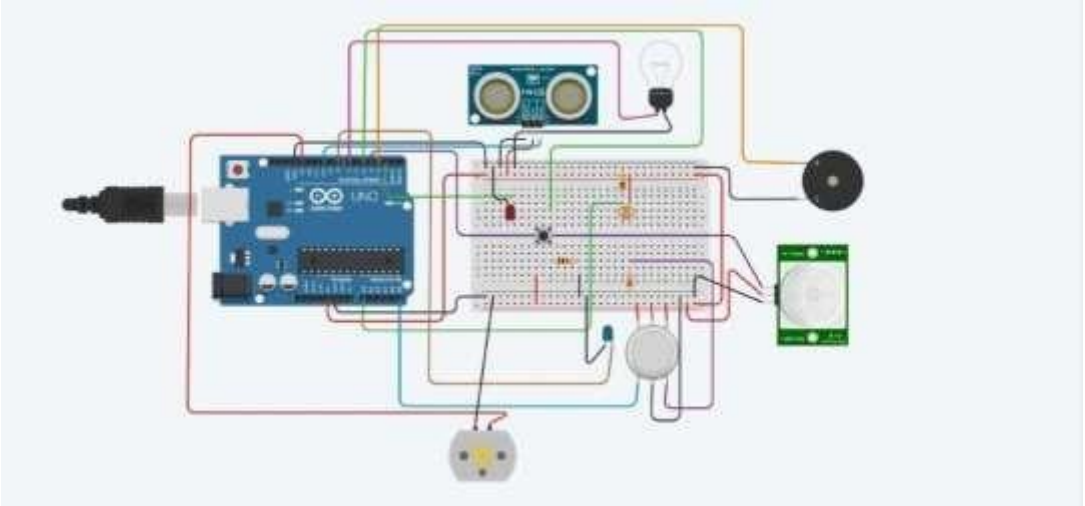
CIRCUIT DIAGRAM :



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;
}
```