NOISE POLLUTION MONITORING

PHASE 3 :DEVELOPMENT PART 1

ABSTRACT :

➢ IoT-based Noise Pollution Monitor implemented using Arduino, designed to address the growing concern of noise pollution in urban areas.

➢ The project leverages the power of IoT to create a real-time monitoring system capable of measuring noise levels, collecting data, and providing insights for noise pollution management.

➢ The system is built around an Arduino microcontroller, which interfaces with a noise sensor (e.g., a sound level sensor or a microphone) to continuously monitor ambient noise levels.

➢ The collected data is then transmitted to a cloud-based platform using Wi-Fi or other connectivity options, allowing for remote access and analysis.

PYTHON SCRIPT:

```python
import serial

import requests

arduino = serial.Serial('COM3', 9600)

iot_endpoint = 'https://www.tinkercad.com/things/noise-pollution-monitoring-system-'

try:

while True:

data = arduino.readline().decode('utf-8').strip()

noise_level = float(data)

payload = {'noise_level': noise_level}

response = requests.post(iot_endpoint, json=payload)

print(f"Data sent: {data}")

except KeyboardInterrupt:

arduino.close()
```

ARDUINO UNO R3 :

```
const int pingPin = 7;

const int red=11;

const int blue=10;

int green=9;

void setup()

 {

  Serial.begin(9600);

  pinMode(red,OUTPUT);

  pinMode(blue,OUTPUT);

  pinMode(green,OUTPUT);

  pinMode(3, OUTPUT);

}

void loop()

{

  digitalWrite(3, HIGH);

  delay(1000); // Wait for 1000 millisecond(s)

  digitalWrite(3, LOW);

  delay(1000); // Wait for 1000 millisecond(s)

  long duration, inches, cm;

  pinMode(pingPin, OUTPUT);

  digitalWrite(pingPin, LOW);

  delayMicroseconds(2);

  digitalWrite(pingPin, HIGH);

  delayMicroseconds(5);

  digitalWrite(pingPin, LOW);

  pinMode(pingPin, INPUT);

  duration = pulseIn(pingPin, HIGH);

  inches = microsecondsToInches(duration);
```

```arduino
  cm = microsecondsToCentimeters(duration);

  Serial.print(inches);

  Serial.print("in, ");

  Serial.print(cm);

  Serial.print("cm");

  Serial.println();

  if(cm<256)

{

    analogWrite(red,cm);

    analogWrite(blue,255-cm);

    analogWrite(green,inches);

  }

  Else

{

    analogWrite(red,0);

    analogWrite(blue,0);

    analogWrite(green,0);}

    delay(100);

}


  long microsecondsToInches(long microseconds)

 {

  return microseconds / 74 / 2;

}


    long microsecondsToCentimeters(long microseconds)

 {

    return microseconds / 29 / 2;

}
```

IOT DEVICE :
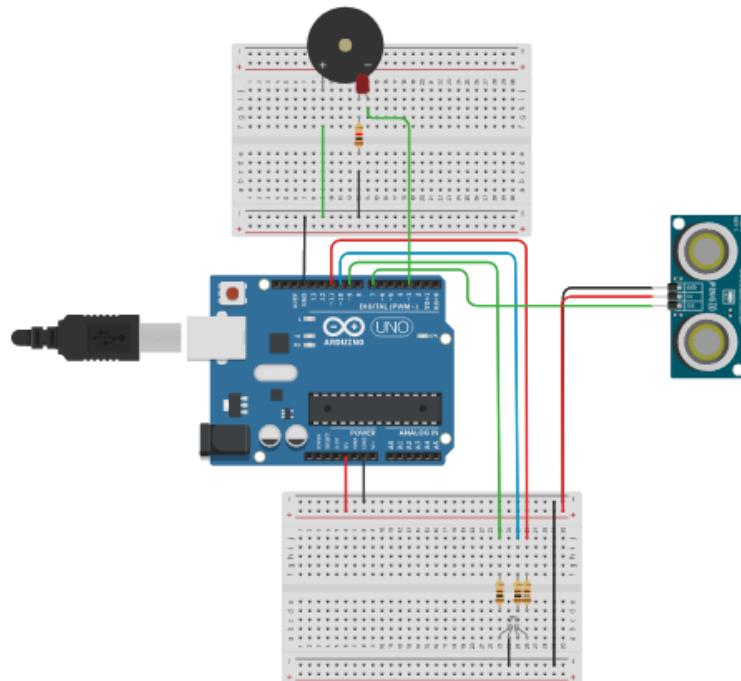
THESE CODE AND THEORY ARE INCLUDED IN PHASE 3: NOISE POLLUTION
MONITORING

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