Project Documentation: DEVELOPEMENT PHASE Noise Pollution Monitoring Device

Table of Contents:

Introduction

Hardware Components

Software Components

Installation and Setup

Website Overview

Troubleshooting

Conclusion

Introduction:

The Noise Pollution Monitoring Device is a project that utilizes Arduino, Python, and Node-RED to monitor noise levels in a given environment. This documentation provides a comprehensive guide on how to set up, deploy, and use the device effectively

Hardware Components:

Arduino Board (e.g., Arduino Uno)

Microphone Sensor

Connecting wires

Power source

Software Components:

Arduino IDE

Python

Node-RED

Web browser (for accessing the monitoring website)

Installation and Setup:

Arduino

Connect the microphone sensor to the Arduino board following the provided pinout instructions.

Upload the Arduino code

Python

Install the required Python packages using pip:

Node-RED

Install Node-RED on your computer. Detailed instructions can be found on the official Node-RED website.

Website Overview:

The website created using Node-RED serves as the interface for viewing the noise levels. It receives the audio payload sent from the Arduino, processes it to obtain decibel values, and displays them in a user-friendly format.

Troubleshooting:

Ensure all connections between hardware components are secure and correct.

Verify that the Arduino is properly powered.

Check for any error messages in the Arduino IDE serial monitor.

Inspect the Python script for any syntax or runtime errors.

Conclusion:

The Noise Pollution Monitoring Device provides an effective means of monitoring noise levels in real-time. By following this documentation, you should be able to set up and utilize the device successfully. For further inquiries or assistance, please refer to the project's support channels