

An abstract graphic on the left side of the slide, consisting of a series of vertical and diagonal lines of varying lengths, some ending in small circles, resembling a circuit board or a stylized tree structure.

NOISE POLLUTION MONITORING

PROJECT DEFINITION:

- The project involves deploying IoT sensors to measure noise pollution in public areas and providing real-time noise level data accessible to the public through a platform or mobile app.
- The primary objective is to raise awareness about noise pollution and enable informed decision-making.
- This project includes defining objectives, designing the IoT sensor system, developing the noise pollution information platform, and integrating them using IoT technology and Python.

PROBLEM DEFINITION:

- To Construct an IoT project which detects the environment sounds and its results are to be displayed through a platform or an app

Main Object: To build a IOT Project which detect the environment sounds.

The background is a dark blue gradient. In the corners, there are white line art illustrations of circuit boards or neural networks, with lines and small circles representing nodes.


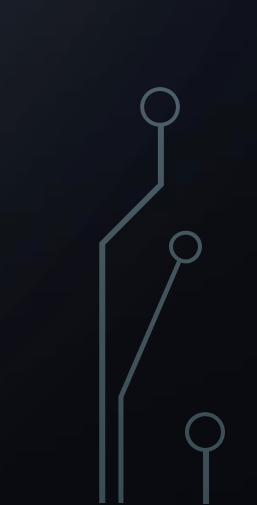
DESIGN THINKING

PROJECT OBJECTIVES:

- **Real-time Noise Pollution Monitoring:** Develop a system capable of continuously and accurately measuring noise levels in real-time across designated areas, providing instant access to noise data.
- **Public Awareness :** Launch a public awareness campaign to educate the community about noise pollution, its effects, and ways to reduce it.
- **Noise Regulation Compliance:** Assist regulatory authorities in monitoring and enforcing noise pollution regulations, providing data as evidence for compliance or non-compliance cases..
- **Improved Quality of Life:** Strive to improve the quality of life for residents and businesses in the monitored areas by addressing and mitigating noise pollution issues.



PROJECT REQUIREMENTS:

- ESP32 Microcontroller
 - Sound Sensor like KY-038
 - Bread Board and Jump Wires M/F
 - OLED Board
 - Arduino IDE
 - Arduino IoT Cloud or Blynk IoT
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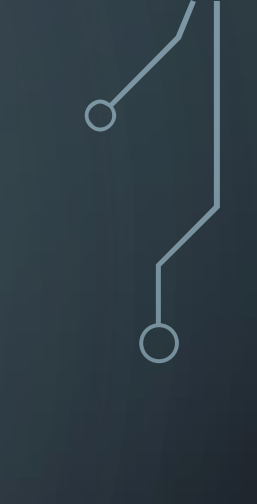
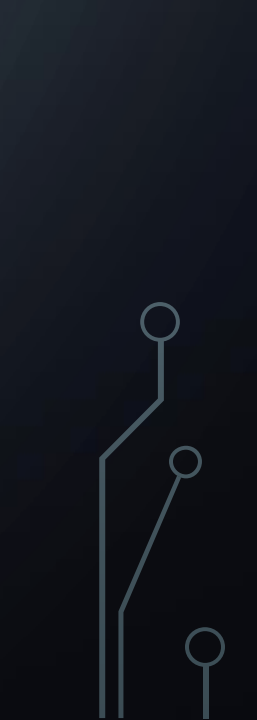
NOISE POLLUTION INFORMATION PLATFORM:

Components Required:

- Microphone Sensor(KY-038)
- Microcontroller(ESP32)
- Internet Connectivity
- Arduino
- App Development Platform
- Programming Languages



STEPS TO BUILD:

- Connect the microphone sensor to the microcontroller
 - Upload the code to the microcontroller
 - Connect Internet
 - Expose the data through a interface
 - Develop Mobile App or Use Arduino IoT Cloud or Blynk IoT App
 - Display Sound Levels
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INTEGRATION APPROACH:

- The Sensor works to detect the sound and display the results in the connected OLED Display.
- If to display the result in a platform, connect the microcontroller to the internet and expose the data by using some of the protocols like MQTT, HTTP so on.
- Develop a mobile app or an platform and fetch the exposed data through API and display on it.
- Also, Arduino provide Arduino Cloud Service where we can develop a project and it is easy to get and display the result there instead of developing an application.

DESIGN OVERVIEW

Connect the KY-038 Sound Sensor to your ESP32 using jumper wires.

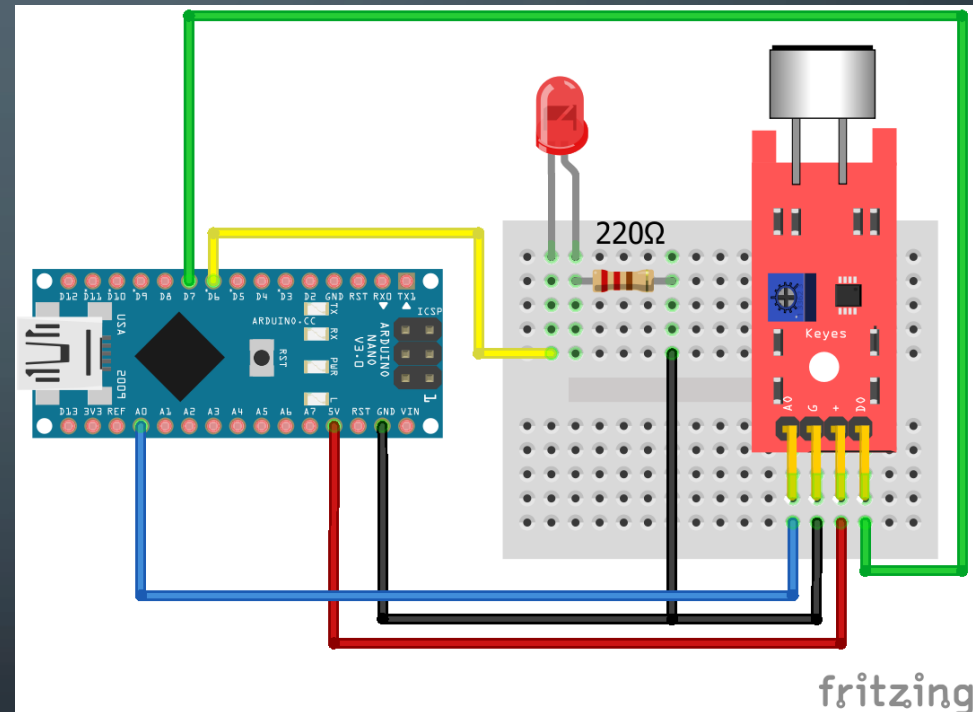
Connect the KY-038 VCC pin to ESP32 3.3V or 5V

Connect the KY-038 GND pin to ESP32 GND.

Connect the KY-038 OUT pin to a GPIO pin on the ESP32 (e.g., GPIO 36).

Power the ESP32 using a USB cable or an external power source.

Next to write the code for the ESP32 to read the sensor data and send it to an app





THANK YOU