KINGS ENGINEERING COLLEGE PROJECT

TITLE: NOISE POLLUTION MONITORING (IOT_PHASE 3)
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A Noise Pollution IoT (Internet of Things) project aims to monitor and manage noise pollution in a specific area using IoT devices and sensors. Such a project can help in understanding noise levels, identifying sources of noise pollution, and taking necessary actions to mitigate its impact. A Noise Pollution IoT project can be a valuable tool for monitoring and managing noise pollution in urban areas, industrial zones, residential neighborhoods, and various other settings. It can help improve the quality of life by addressing noise-related issues and promoting a healthier environment.

TESTING AND DEPLOYMENT:
Test the sensors and the entire system in a controlled environment before deploying them in public areas. Consider the scalability and maintenance of the system as you deploy more sensors. Remember to document your work thoroughly and follow best practices for IoT development. It's also essential to comply with any legal and privacy regulations when collecting data in public areas.

PYTHON SCRIPT:

1.) Replace broker address, port, username, and password with the credentials and address of your MQTT broker.
2.) Define the topic where you want to publish the noise level data. Ensure that the platform where you're receiving the data subscribes to this topic.
3.) In the while loop, you simulate reading noise levels from the sensor using random. Uniform. Replace this with the actual code to read noise levels from your IoT sensor.
4.) Create a message that includes the noise level data.
5.) Publish the message to the MQTT broker using the client. Publish method.
6.) Adjust the sleep interval (time. Sleep) as needed, depending on how frequently you want to send data. In this example, it sends data every 5 seconds.

```python
import time
import random
import paho.mqtt.client as mqtt

# Define MQTT broker information
broker_address = "mqtt.yourserver.com"
port = 1883
username = "your_username"
password = "your_password"

# Define the topic where you want to publish the noise level data
topic = "noise_level"

# Initialize the MQTT client
client = mqtt.Client("NoiseSensor")
client.username_pw_set(username, password)

# Connect to the MQTT broker
client.connect(broker_address, port)
```

```python
while True:
    # Simulate reading noise level from the sensor
    noise_level = random.uniform(50, 100)  # You should replace this with

    # Create a message with the noise level
    message = f"Noise Level: {noise_level} dB"

    # Publish the message to the MQTT broker
    client.publish(topic, message)

    print(f"Published: {message}")

    # Sleep for a specified interval (e.g., every 5 seconds)
    time.sleep(5)

# Disconnect from the MQTT broker when done (if needed)
# client.disconnect()
```