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| Difference Between NAAC & NBA Accreditation - Haq Se EngineerPREC LONIJai Shriram Engineering College (@JSREC09) / Twitter**JAI SHRIRAM ENGINEERING COLLEGE**  **TIRUPPUR – 638 660**  Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai  Recognized by UGC & Accredited by NAAC and NBA (CSE and ECE) |

**DEPARTMENT OF**

**ELECTRONICS AND COMMUNICATION ENGINEERING**

**IBM - Naan Mudhalvan**

**Internet of Things**

**Group 3**

**Phase 2 - Project Submission**

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**YEAR : III**

**INNOVATION:**

**Hardware Setup:**

Use IOT-ready microcontrollers such as Raspberry Pi or Arduino with built-in Wi-Fi or add Wi-Fi modules for connectivity.Connect a sensitive microphone sensor or an array of microphones to capture ambient noise.

**Data Collection:**

Capture audio samples at regular intervals and convert them to digital data.Measure noise levels in decibels (dB) and store the data locally or in the cloud.

**Connectivity:**

Utilize Wi-Fi or other IOT protocols (e.g., LORA, NB-IOT) to send data to a central server or cloud platform**.**

**Data Processing:**

Implement noise analysis algorithms to classify noise events (e.g., traffic, construction, parties) and track trends.Apply signal processing techniques to filter and refine the data**.**

**User Interface:**

Develop a web or mobile application for users to access the noise data.Include features like real-time noise level monitoring, historical data, and customizable alerts**.**

**Alerts and Notifications:**

Set up notifications for users when noise levels exceed predefined thresholds**.**

**Enable customization of alert preferences.**

**Data Visualization:**

Create interactive graphs and charts to display noise data trends.Offer geographic visualization through maps**.**

**Machine Learning (Optional):**

Train machine learning models to predict noise patterns and recognize specific noise sources.

**Energy Efficiency:**

Implement power-saving features to ensure the system runs efficiently, such as sleep modes for sensors.

**Cloud Integration:**

Store data in the cloud for scalability and remote access.Utilize cloud services for data analysis and reporting.

**Community Engagement:**

Allow users to report noise complaints through the app.Foster a sense of community involvement in noise control.

**Legal and Ethical Considerations:**

Ensure compliance with privacy regulations and data protection laws.Address any potential concerns related to audio surveillance.

**Maintenance and Updates:**

Plan for regular maintenance and software updates to keep the system running smoothly.

**Data Analytics:**

Use collected data for urban planning, noise pollution studies, or public policy decisions.

**Cost Considerations:**

Balance cost-effectiveness with system quality to make it accessible to a wide range of users.This project combines IOT, data analysis, and user engagement to create a valuable noise monitoring system that can contribute to a quieter and more livable environment.