Gnanamani
College of Technology
Gateway to Great Life !
Accredited by NAAC 'A' Grade & NBA
AUTONOMOUS

DEPARTMENT OF BIO MEDICAL ENGINEERING

PHASE - 4 PROJECT SUBMISSION

Submitted by

Team Members

R.ARULMURUGAN

J.AROKKIYADASS

M.DINESHPRABU

S.GIRINATH

S.CHANDRU

Presented by

R.ARULMURUGAN

FUTURE ENGINEERING

Sensor Integration: Utilize advanced sensors to capture real-time noise data, ensuring accuracy and reliability.

Wireless Connectivity: Implement IoT protocols for seamless communication between sensors and a central monitoring system.

Data Analytics: Employ sophisticated analytics to process large datasets, enabling pattern recognition and trend analysis.

Machine Learning Algorithms: Train models to distinguish between normal and problematic noise levels, enhancing system intelligence.

Cloud Integration: Store data on cloud platforms for accessibility, scalability, and efficient management of information.

Real-time Alerts: Develop a notification system to alert authorities or residents when noise levels exceed predefined thresholds.

Geospatial Mapping: Incorporate geospatial mapping to identify noise hotspots and plan targeted interventions.

Energy Efficiency: Design the system to operate with low energy consumption, promoting sustainability.

User-Friendly Interface: Create an intuitive interface for users to easily access and interpret noise pollution data.

Community Engagement: Foster community involvement by providing public access to certain data, encouraging awareness and collaborative solutions.

MODEL TRANING

Define the problem: Clearly outline the objectives of your noise pollution monitoring system and the specific features you want to detect.

Data collection: Gather diverse and representative datasets that cover various noise levels and sources to train your model effectively.

Feature selection: Identify relevant features such as frequency, amplitude, and duration that contribute to accurate noise level classification.

Data preprocessing: Clean and preprocess the data to handle missing values, outliers, and standardize the features for better model performance.

Model selection: Choose a suitable machine learning or deep learning model based on the complexity of your noise data. Common choices include decision trees, support vector machines.

Split the data: Divide your dataset into training and testing sets to assess the model's performance on new, unseen data

EVALUATION

Data Accuracy: Ensure the system provides precise noise level measurements.

Real-time Monitoring: Evaluate the system's ability to offer instant updates on noise levels.

Scalability: Assess whether the system can handle an increasing number of monitoring devices.

Energy Efficiency: Consider the power consumption of IoT devices for sustainable operation.

User Interface: Evaluate the user-friendliness of the interface for easy understanding.

Data Security: Ensure robust measures are in place to protect sensitive noise data.

Alert Mechanism: Assess the effectiveness of alerts for surpassing noise thresholds.

Integration: Check the compatibility of the system with other smart city technologies.

Maintenance: Evaluate the ease of maintaining and troubleshooting the system.

Cost-effectiveness: Consider the overall expenses versus the benefits of the monitoring system.