KINGS ENGINEERING COLLEGE

PROJECT TITLE: AIR QUALITY MONITORING

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PROJECT DESCRIPTION:

 The project aims to establish an Internet of Things (IoT) based system for monitoring air quality parameters and making the data publicly available to raise awareness about air quality and its impact on public health. This endeavor involves defining clear objectives, designing IoT devices for monitoring, developing a web-based data-sharing platform, and integrating these components using IoT technology and Python.

PROJECT OBJECTIVES

1. Real-time Air Quality Monitoring: Implement IoT devices to continuously measure key air quality parameters, including particulate matter (PM), gases (NO2, SO2, CO, VOCs), and meteorological data like temperature and humidity.

2. Data Sharing: Develop a user-friendly, web-based platform to provide real-time air quality data to the public. The platform should be accessible via desktop and mobile devices.

3. Public Awareness: Promote awareness about air quality issues by presenting data in an understandable and engaging manner. Use visualizations and educational content to inform the public about the implications of poor air quality on health and the environment.

4. Health Impact: Offer insights into the potential health impacts of air pollution. Provide recommendations and guidance on protective measures during periods of poor air quality.

SENSOR SELECTION:

We will select appropriate sensors for measuring air quality parameters. These sensors should be accurate, reliable, and cost-effective. Potential sensor types include:

- Particulate Matter (PM) Sensors

- Gas Sensors (NO2, SO2, CO, VOCs)

- Meteorological Sensors (Temperature, Humidity)

HARDWARE DESIGN:

Design a compact and weather-resistant housing for the sensors and IoT communication modules. Ensure proper ventilation and protection from environmental factors.

POWER SUPPLY:

Choose power sources that suit the deployment location. Options may include battery-powered devices with solar panel charging for remote areas or direct electrical connection for urban installations.

CONCLUSION

The IoT-Based Real-Time Air Quality Monitoring System project is driven by the objectives of enhancing public awareness, providing valuable health insights, and promoting proactive measures against air pollution. With a well-designed IoT sensor network and an intuitive data-sharing platform, this project seeks to empower individuals and communities to make informed decisions for healthier living. The next steps involve detailed planning, sensor procurement, hardware assembly, software development, and thorough testing to ensure the project's success.