Air quality monitor

Project Definition: The project involves setting up IoT devices to measure air quality parameters and make the data publicly available for raising awareness about air quality and its impact on public health. The objective is to create a platform that provides real-time air quality information to the public. This project includes defining objectives, designing the IoT monitoring system, developing the data-sharing platform, and integrating them using IoT technology and Python.

Define Objectives:

Clearly outline project goals, target audience, and intended impact on raising awareness about air quality.

Sensor Selection and Setup:

Choose the best sensors based on the air quality parameters to be measured. Wire and configure the sensors with the selected microcontrollers.

IoT Device Setup:

To program the microcontrollers to collect the data from a sensors at regular intervals. Set up the communication protocols to transmit the data securely to the IoT gateway.

IoT Gateway and Data Processing:

IoT gateway is to receive a data from the IoT devices. Process of received data to ensure accuracy and consistency.

Data Storage:

To design and set up of a database to store the processed of air quality data.

Web Application Development:

Create a user-friendly web interface to display real-time air quality data. Implement features like data visualization, historical data access, and user authentication.

Integration and Testing:

Integrate IoT devices, IoT gateway, data storage, and the web application. Conduct a rigorous testing to ensure seamless data flow, real-time updates, and platform reliability.

Deployment:

To develop the IoT devices in target locations to start collecting air quality data. To make the data publicly accessible through the web application.

Monitoring and Maintenance:

Monitor system performance and user feedback for continuous improvements. Address of any issues and update the system as needed to enhance its functionality and accuracy.