

AIR QUALITY MONITORING_USING_IOT

(PHASE 1: NAAN MUDHALAVAN)

1. Select Monitoring Locations:

Determine where to measure air quality.

This may include urban areas, industrial zones, or specific sites near pollution sources.

2. Choose Monitoring Parameters:

Decide which air pollutants to measure.

Common parameters include particulate matter (PM2.5 and PM10), nitrogen dioxide (NO2), sulfur dioxide (SO2), carbon monoxide (CO), ozone (O3), and volatile organic compounds (VOCs).

3. Select Monitoring Instruments:

Acquire the appropriate monitoring instruments for chosen parameters. This could include air

quality sensors, samplers, and analyzers. Ensure they are calibrated regularly.

4. Data Collection:

Install monitoring equipment at selected locations. Collect data continuously or at regular intervals. Ensure data integrity and quality control.

5. Data Transmission:

If monitoring is remote, set up a system to transmit data in real-time to a central database. This can be done via the internet or other communication methods.

6. Data Storage and Management:

Store collected data securely. Use databases or software to manage and analyze the data.

7. Data Analysis:

Analyze air quality data to identify trends, patterns, and potential issues. Compare results to air quality standards and regulations.

8. Reporting:

Generate regular reports summarizing air quality measurements and any deviations from standards. Share this information with relevant authorities and the public.

9. Maintenance:

Regularly maintain and calibrate monitoring equipment to ensure accurate measurements. Replace sensors or parts as needed.

10. Interpretation:

Interpret the data to understand the impact on public health and the environment. Identify areas where air quality improvements are needed.

11. Action:

Based on data analysis, take corrective actions to mitigate air quality issues. This may involve implementing

pollution control measures imposing regulations, or advising the public on reducing exposure.

12.Public Awareness:

Inform the public about air quality conditions through various channels, such as websites, apps, and public announcements.

13.Continuous Monitoring and Improvement:

Continue to monitor air quality over time and adjust monitoring strategies as needed. Strive for continuous improvement in air quality management.

Block diagram for Air Quality Monitoring :

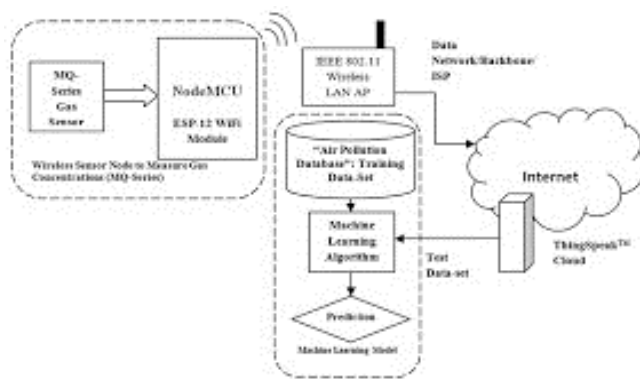
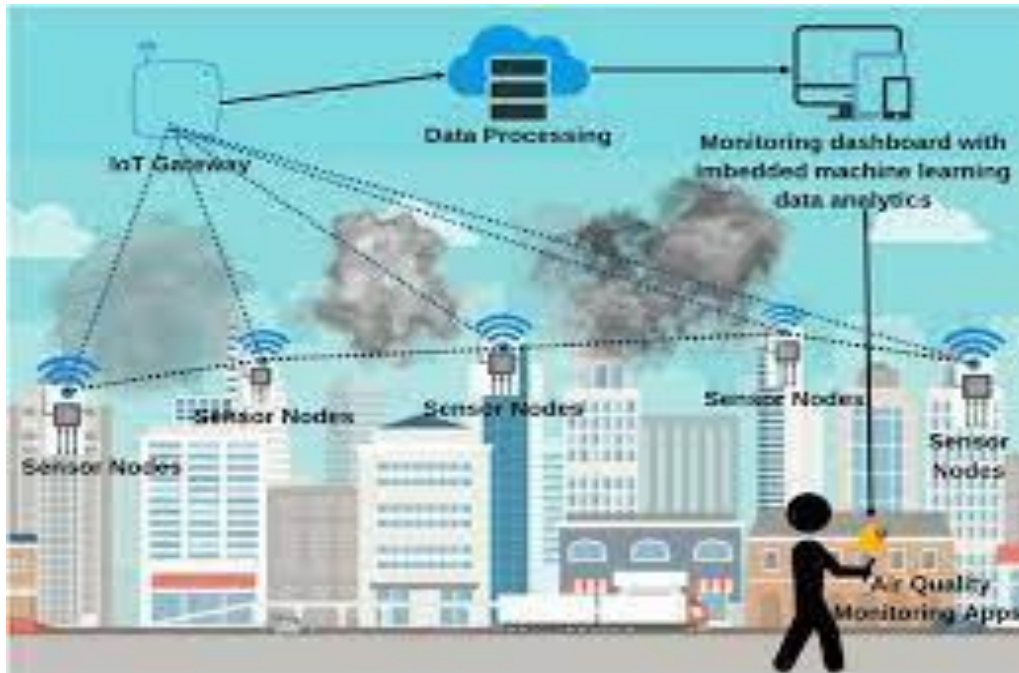


Diagram :



Program :

```
python
```

```
import requests
```

```
# Replace these with your actual API endpoint and key
```

```
API_ENDPOINT = 'https://example.com/api/air-quality'
```

```
API_KEY = 'your_api_key_here'
```

```
def get_air_quality(location):  
    headers = {'Authorization': f'Bearer {API_KEY}'}  
    params = {'location': location}  
  
    try:  
        response = requests.get(API_ENDPOINT,  
headers=headers, params=params)  
        if response.status_code == 200:  
            data = response.json()  
            air_quality_index = data.get('air_quality_index')  
            pollutants = data.get('pollutants')  
            print(f'Air Quality Index for {location}:  
{air_quality_index}')  
            print('Pollutants:')  
            for pollutant, value in pollutants.items():  
                print(f'{pollutant}: {value}')  
        else:
```

```
        print(f'Error: Unable to fetch data. Status code  
{response.status_code}')
```

```
    except Exception as e:
```

```
        print(f'An error occurred: {e}')
```

```
if __name__ == '__main__':
```

```
    location = input('Enter a location for air quality  
monitoring: ')
```

```
    get_air_quality(location)
```