"Air Quality Monitoring"

Sensor Selection: Choose appropriate sensors for detecting key pollutants like particulate matter (PM2.5, PM10), carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), and volatile organic compounds (VOCs).

Data Display: Create a user-friendly interface, such as an LED display or a mobile app, to show real-time air quality data.

Alerts: Implement visual or audible alerts when air quality reaches unhealthy levels, helping users take precautionary measures.

Connectivity: Include options for Wi-Fi or Bluetooth connectivity to sync data with smartphones or other devices.

Battery Power: Design for efficient power consumption to ensure longer battery life for portable units.

Data Logging: Store historical data for trend analysis and reference.

Calibration: Enable sensor calibration for accuracy.

Weather Integration: Include temperature and humidity sensors to account for environmental factors that affect air quality.

Enclosure: Ensure the device is housed in a weatherproof and durable enclosure suitable for indoor or outdoor use.

Low-Cost Components: Opt for affordable, readily available components to keep costs down.

Maintenance: Consider ease of maintenance, like easily replaceable sensors and filters.

Data Visualization: Create informative charts and graphs to help users interpret air quality trends.