VAYUMITRA – The Community-Centric AI Pollution Guard

Empowering Citizens | Informing Authorities | Predicting the Future

[Team Name/Number]

> "While others measure pollution, we manage it through a Quad-Stakeholder ecosystem."

The Invisible Threat: Industrial Pollution in Residential Zones

Context:

Industrial pollution in residential zones like SPB Colony.

The Problem:

Pollution is smelled but invisible. No data = No action.

The Users:

- **Residents:** Parents worried about children's health.
- **Authorities:** Municipal Officers lacking evidence to violators.

Key Insight:

Data isn't enough; accessibility in **Tamil** is the real bridge to safety.

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From IoT to Impact: VAYUMITRA's Innovative Platform

Solution:

An IoT-to-Cloud platform (ESP32 + Firebase) with a multi-role web interface.

Collecting Dreams:

Clean air for every child.

Creating Solutions:

Bilingual Dashboard with a direct complaint system.

Changing Lives:

Immediate reporting leading to immediate action.

Unique Tech:

Low-latency (<1s) cloud sync with built-in **Tamil/English Toggle**.

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Predicting Pollution, Empowering Action

Demo Point: (Show slider movement) Live "Call to Action" alerts.

AI Function:

Trend Prediction – Analyzes spikes to warn users about the *next* 60 minutes.

Role-Based Impact:

- **Public:** Health alerts in local language.
- **Industry:** Compliance portal to monitor own emissions.
- **Officers:** Real-time track-down of pollution sources.

Environmental Justice Through Transparency

Impact:

Zero-delay reporting + Automated accountability.

Uniqueness:

Multi-Role Transparency—Industries cannot hide data from the Government or Public.

Future Scope:

- Physical **Street-light Red Alerts** (Visual warnings on the road).
- WhatsApp/SMS API integration for automated government summons.

Stage 3: The Full-Grown Tree (Long-term Impact) -Neem tree , Banyan tree .etc

Vision:

A "Smart Green City" where every factory is monitored 24/7.

AI Integration:

AI that can suggest better traffic routes to reduce pollution in residential areas.

The Goal:

Changing lives and making every breath safe for the next generation.

"VayuMitra: Turning data into environmental justice."

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