



AMIHAN – AIR QUALITY CHECKER APP

Uplift Code Camp

Prepared by
Russell Ferrero

Quezon City, Philippines

0927 985 5985
Batch 27
FSW

2025

APP IDEA

My app, Amihan, is a web-based air quality checker that allows users to search for their location and instantly view the air quality status in that area. It will pull data from OpenAQ and IQAir APIs to ensure accuracy and coverage, and use the Google Gemini API to thoroughly explain what the readings mean, including their possible effects on human health and everyday life.

APP SUMMARY

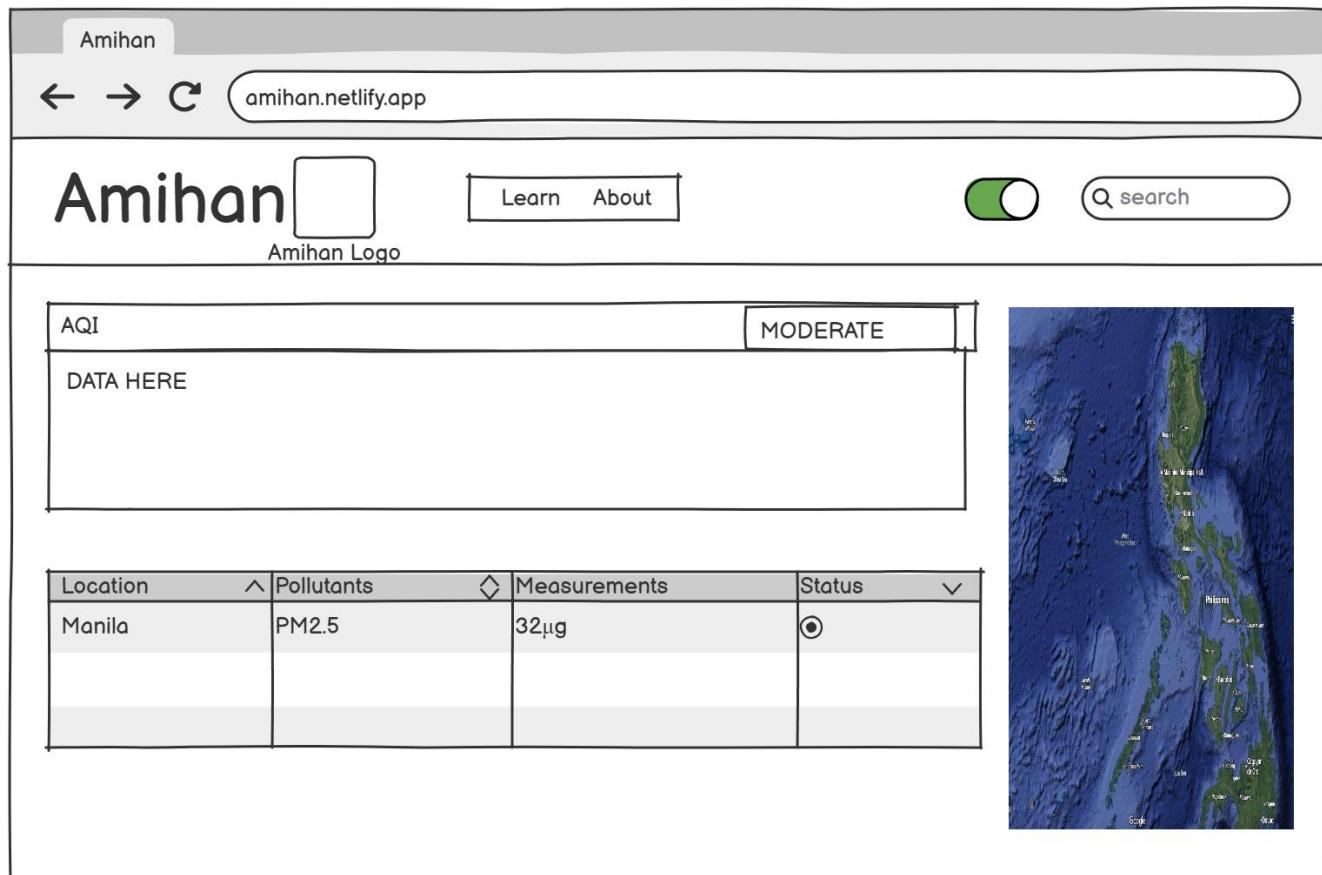
Amihan aims to raise awareness about environmental and health conditions by providing accessible, real-time air quality information for Filipinos. Users can simply type a location and view detailed air quality metrics (like PM2.5, AQI, and pollutants), along with a human-like AI explanation generated by Google Gemini. By integrating data from multiple sources (OpenAQ and IQAir), the app ensures accurate, localized results while maintaining a simple yet elegant design using Bootstrap.

TECH TOOLS

- **HTML5** – for structure and markup
- **CSS3** – for styling and layout
- **Bootstrap 5.3** – for responsive and elegant UI design
- **JavaScript (Vanilla JS)** – for interactivity and API integration
- **OpenAQ API** – to fetch global and public air quality data
- **IQAir API** – to fetch localized and real-time air quality readings, and also to try filling the gaps of data that the OpenAQ can't give
- **Google Gemini API** – to generate AI-powered explanations of air quality data

WIREFRAME

The following wireframe below is tentative, but this is the overall idea of what my web app will look like. The map on the right side, data on the left side, all using Bootstrap.



USER STORIES

As a user, I know what the app is about.

- I can see the title of the app.
- I can know how to use the app.

As a user, I can interact with the app.

- I can interact with the app on its intended functionality.
- I can give an input and get an output from the app as per its intended functionality

- I can get responses quickly and smoothly to my interactions, providing a seamless user experience.
- I can receive clear error messages if something goes wrong, along with guidance on how to resolve the issue.

MVP FEATURES

HIGH PRIORITY

- Location Search Functionality
 - User can type a city or area (ex. “Manila”), app fetches air quality data for that location, use OpenAQ first for data.
- Air Quality Data Display
 - Show PM2.5, PM10, and other parameters.
 - Display their values and categories (ex. “Moderate”, “Unhealthy”)
 - Color-code them according to the AQI scale
- AI Explanation
 - Take the AQ data and generate a comprehensive and easy-to-read explanation about its meaning and impact.
- Bootstrap Responsive Design
 - Use Bootstrap for layout and responsiveness.
 - Must be clean and mobile-friendly.

MEDIUM PRIORITY

- Dual API Integration (OpenAQ + IQAir)
 - If OpenAQ has no data, it tries finding it on IQAir datasets (backup/fallback).
- Interactive Map View
 - Display monitoring stations using Leaflet/Mapbox
 - Pins show AQ data per city

- About Air Quality / Learn Page
 - Educate my users about the meaning of the measurements, what my app tries to solve, etc.

LOW PRIORITY

- Theme toggle
 - Use Bootstrap's theme utility classes, and I can also polish or personalize it.
- City Comparison/Trends
 - Compare AQI between two cities
- Daily Air Quality Tips
 - This can be handled by the AI model (in this case, Gemini) to give tips to users.

TRELLO BOARD LINK

My Kanban Trello board is subject to change, I might add/remove some of the tasks if it's not that useful anymore OR I add if that certain task comes up unexpectedly.

<https://trello.com/invite/b/68dd4df38a67d45d6c2413e8/ATTla33e311a504820e3d918c534d89aa3d2E3401BAA/amihan-> 