

CMPS 350 – Web Development Fundamentals

Midterm Practical Exam – Air Quality Index (AQI) Monitor

Objective

Develop an AQI Monitor that retrieves real-time air quality data for a capital cities around the world.

Implementation Tasks

1. Fetch and Display AQI Data [35 pts]

- Retrieve AQI data from the following [API Endpoint](#).
- Make sure the result is displayed in the same structured format as illustrated in Figure 1. You must write the necessary CSS styles to accurately replicate the layout and appearance of the provided figure. Also your layout should be responsive. **[Use Grid]** [5 points]

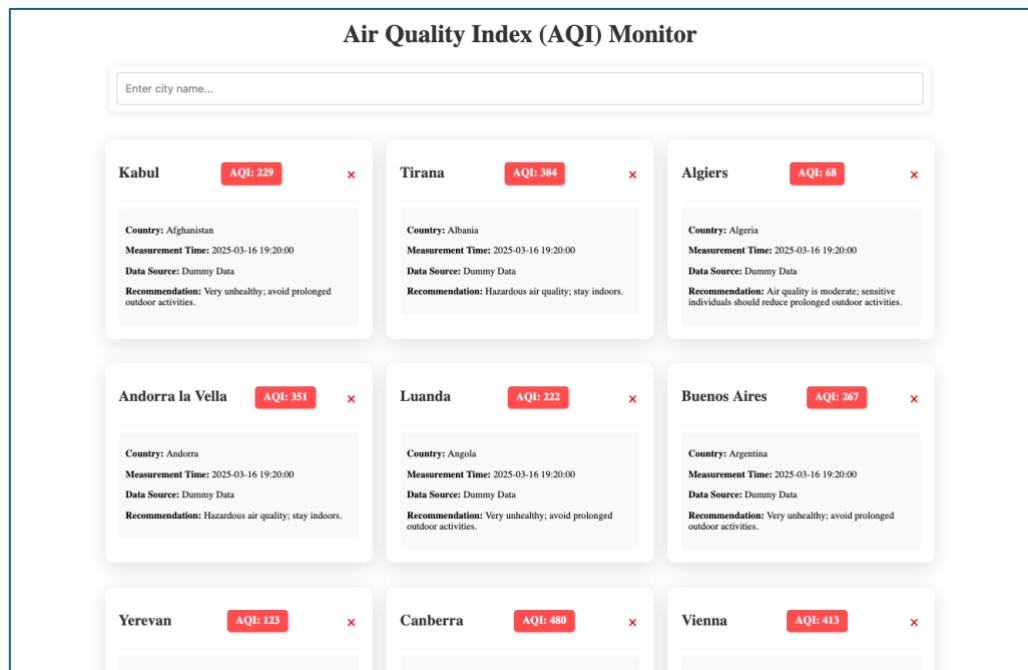


Figure 1 : Loading and Displaying the AQI Data

2. Cache Data in localStorage [20 pts]

- Store AQI data in **localStorage** and ensure data retrieval is performed only if it is not already stored. The API should only be called when the data is missing from localStorage to minimize unnecessary network requests.

3. Delete Functionality [20 pts]

- Clicking **"Delete"** removes a city's AQI data from **localStorage** and the displayed list.

4. Search Functionality [20 pts]

- As the user types in the search bar, dynamically filter and display all cities that match the search query in real-time. The displayed results should update instantly to reflect only the relevant cities. See the reference figure 2 below. Eg. User types “ti”

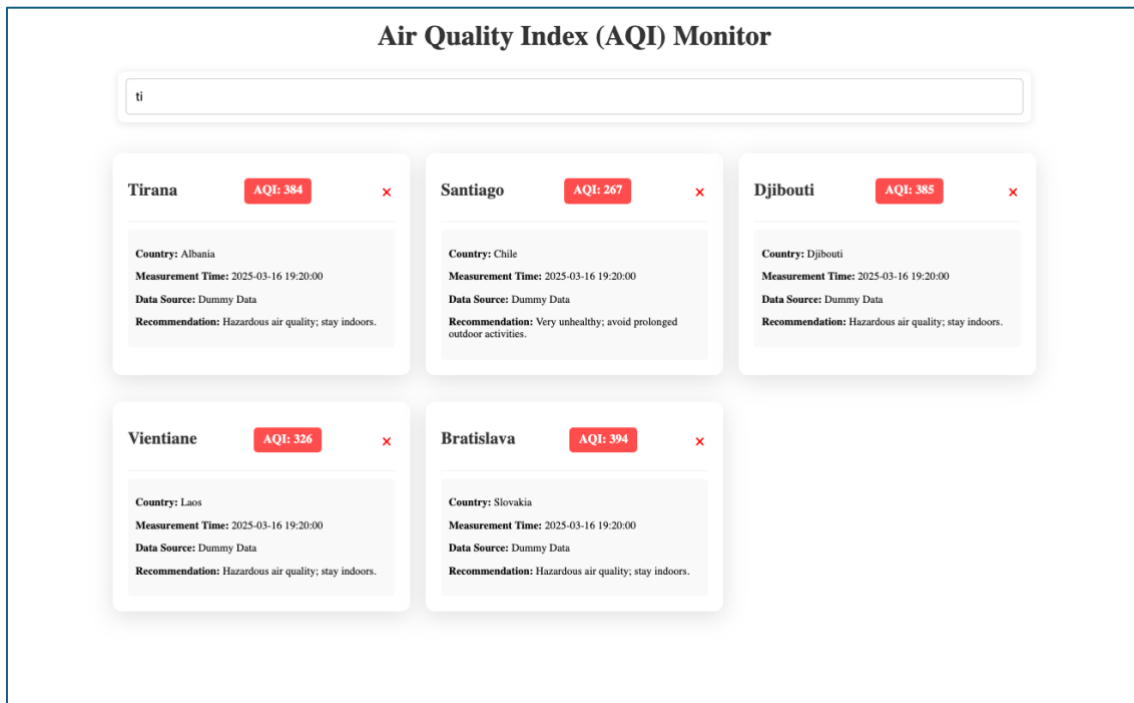


Figure 2 : Filtering Cities

Grading Breakdown

Task	Points
Fetch and display AQI data using a search box and list	35 pts
Caching in localStorage	20 pts
Implement delete functionality	20 pts
Implement search functionality	25 pts
Total	100 pts