SPOKANE PUBLIC LIBRARY

Air Quality Monitoring: Data Harvest and Community Display

I collaborated with a team of junior developers to create an interface for the Spokane Public Library (SPL) that would display live Air Quality Index (AQI) values at each library branch. The interface will be accessible from the library's website and is also available to the public on a touch screen display in the library's central branch.

What is Air Quality?

AQI values show the quality of air outside. Depending on the quality, some groups of people may need to choose to stay inside for their lung health. Having these sensors at the library will allow users to see the difference between the filtered air that the library provides and the outside air, and alert them to potentially hazardous conditions.
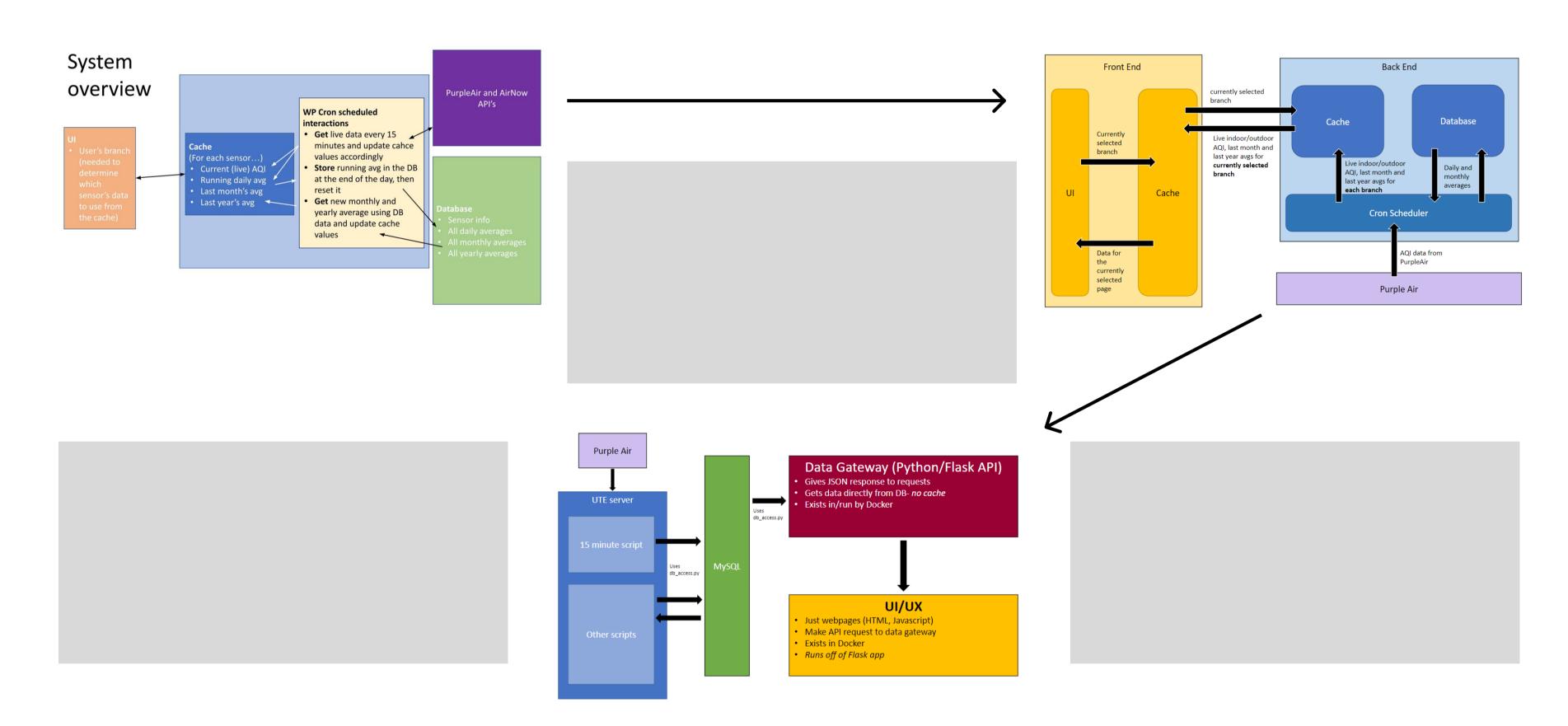
AIR QUALITY INDEX - PARTICULATE MATTER	
301+	HAZARDOUS
201-300	VERY UNHEALTHY
151-200	UNHEALTHY
101-150	UNHEALTHY FOR SENSITIVE GROUPS
51-100	MODERATE
0-50	GOOD

How is it Measured?

Air quality data is collected using PurpleAir sensors (shown above) installed inside and outside of each library branch. Calculating the Air Quality Index requires the concentration of pollutant particles in the air. This concentration is collected from the sensors. After determining the numeric value of the AQI, it's then categorized into a level that ranges from "Good" to "Hazardous" to inform the user.
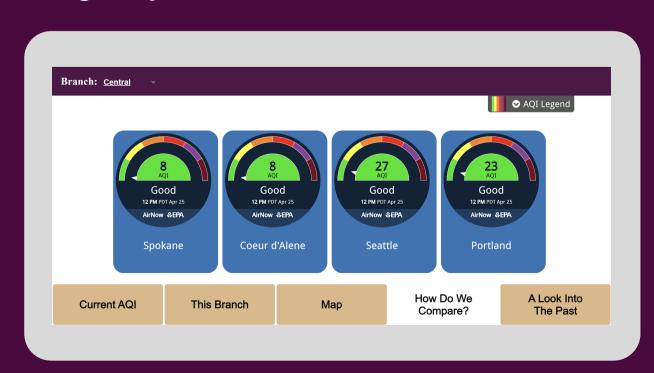
The Evolution of Architecture Design

Final User Interface Designs

The A Look Into The Past page allows users to compare the current AQI at their library branch with averages across the previous month and the previous year. The initial design included graphs to provide more detailed visualizations of the change. While these graphs are not present in the final product, the team hopes that a continuation of this project might introduce this and other ways of informing the public.

The interface displays AQI data to users in a variety of ways. To give the public points of comparison, the How Do We Compare? page offers AQI data for other cities in the surrounding area. Users can also compare indoor and outdoor AQI's at their chosen branch in the This Branch, or view AQI levels on a map in the Map page.

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