CitiBike NYC Strategy Dashboard

Objective – In this project, I examined NYC bike-share user behavior to support strategy decisions. The goal was to uncover insights to improve bike availability, optimize distribution, and guide expansion across the city.

Scenario - For this project, I analyzed public CitiBike data to diagnose distribution issues caused by rising demand, especially post-COVID. My role bridges analytics and business, so I translated findings into a clear, interactive dashboard to guide strategy and improve bike availability across NYC.

Key Questions – How does bicycle usage vary by season? What are the most common routes taken by users, and how might they influence station placement? Where are the geographic hotspots for bike shortages or full docking stations? What operational or seasonal trends emerge from the data that can guide strategic recommendations for bike redistribution and station expansion?

Data – This project used open-source data from the CitiBike database for the year 2022. Weather data was gathered using NOAA's API service.

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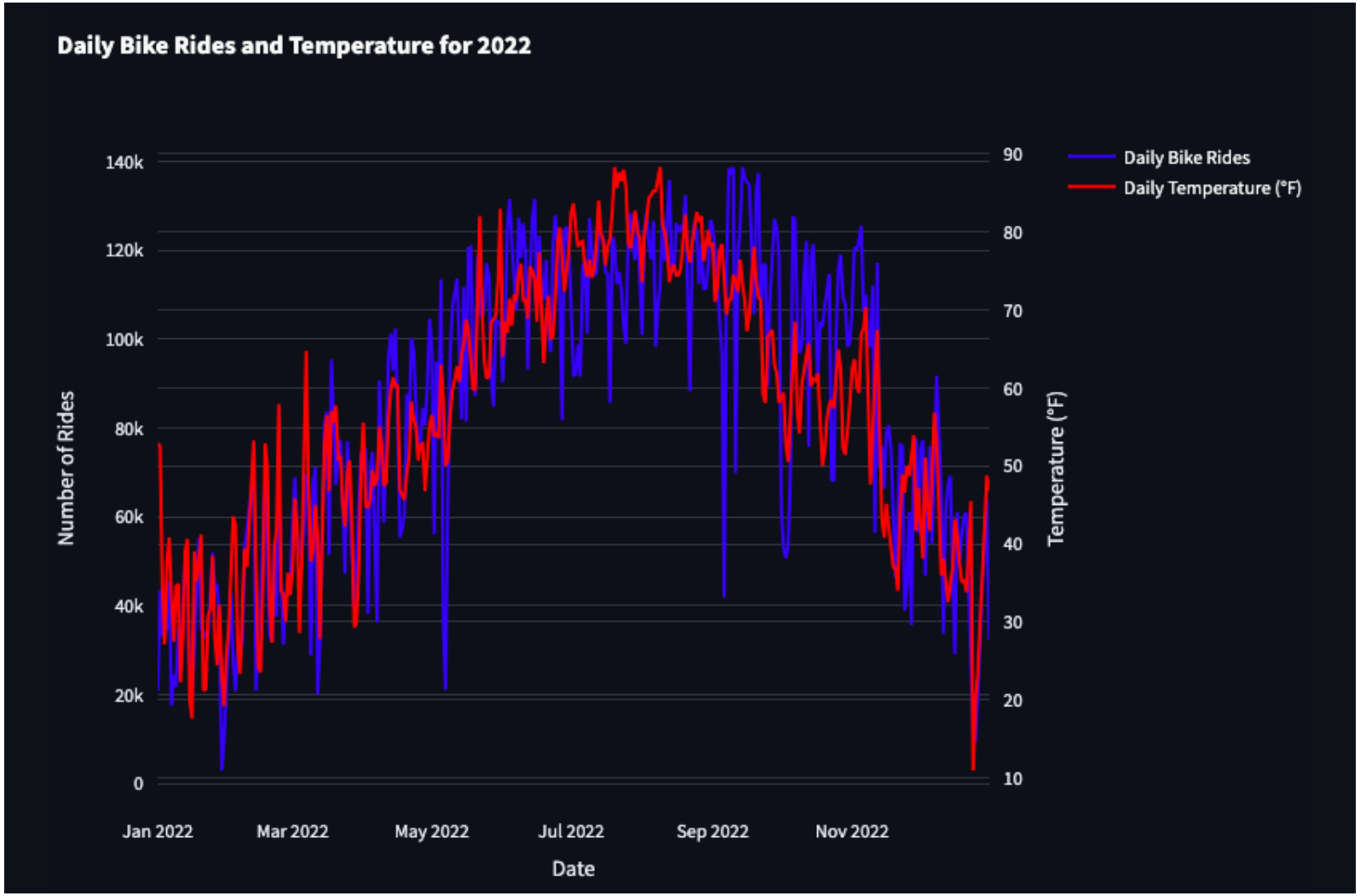
With the API from NOAA (National Oceanic and Atmospheric Administration) I was able to gather temperature information from everyday of the year. Crossing this with the total amount of daily bike rides on a single graph highlighted the relationship these two important variables had.



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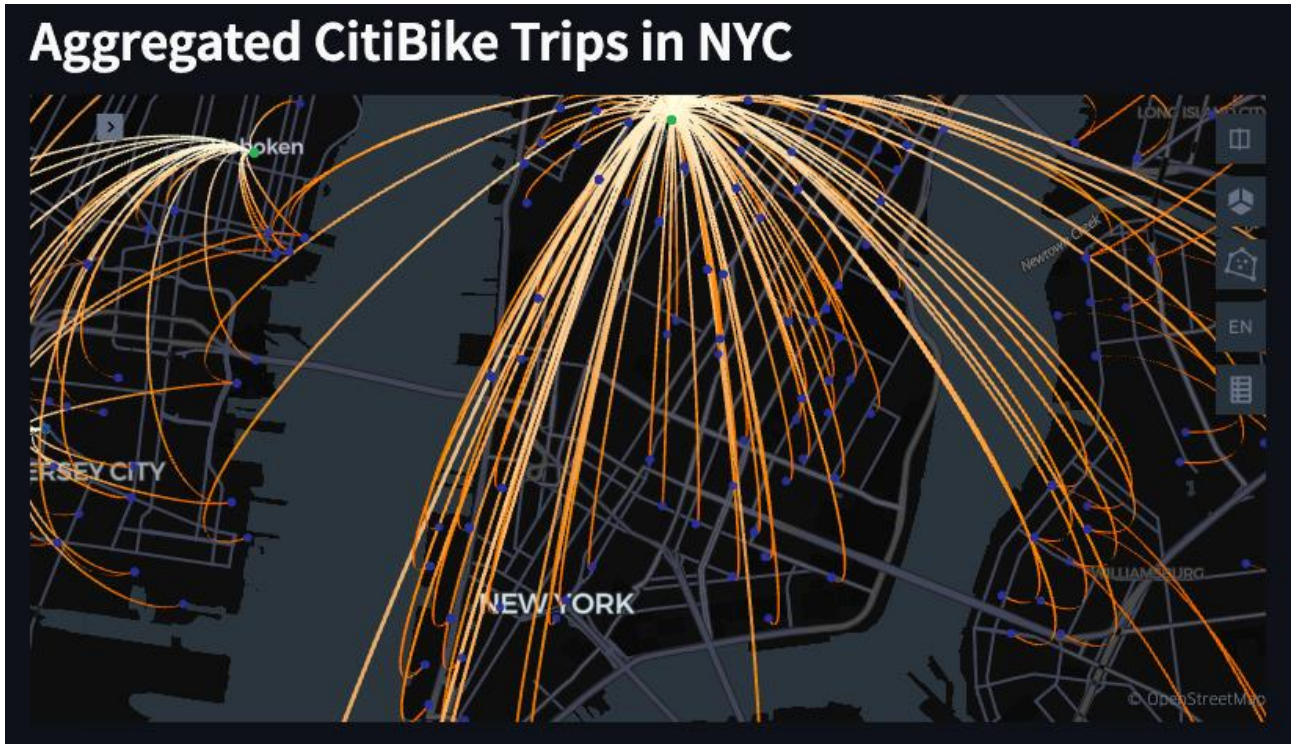
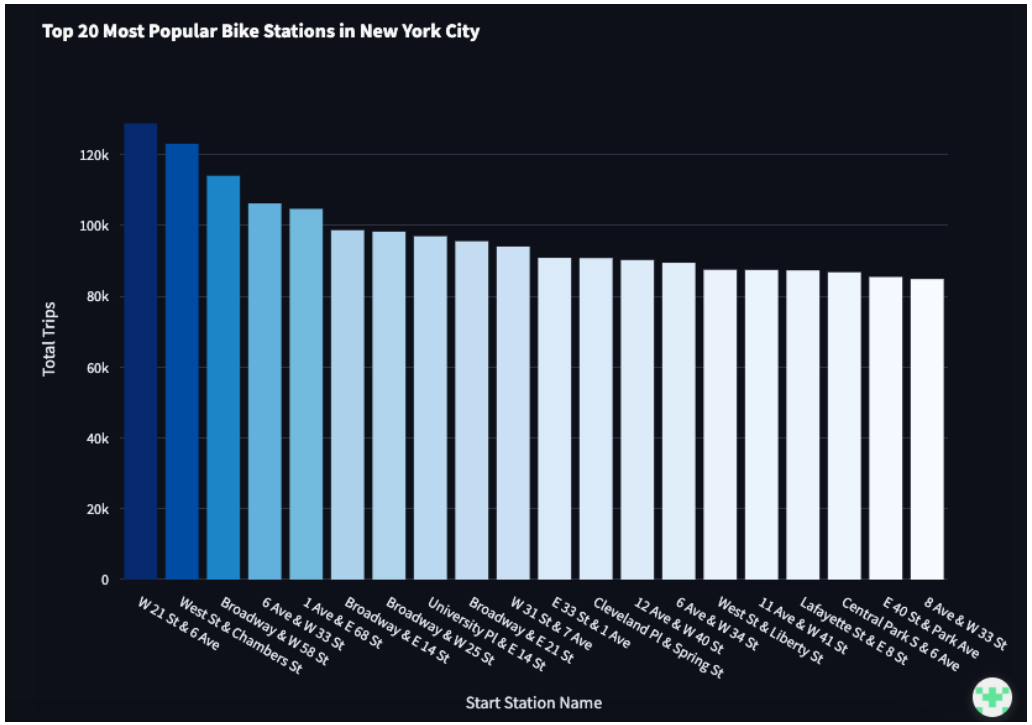
A challenge for me in completing this project was making the map, with all the data that it portrays, seamlessly interactive, and easy to load when visiting the dashboard via the web.





The bar chart with the most popular stations in each season, helped answer the question of which areas of the city needed more bicycle supply and additional stations.

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Main Data Discoveries

Optimize seasonal fleet levels by stocking up before peak demand (mid-April–June), rotating bikes for maintenance in early August, and maintaining a full fleet through mid-November.

Expand station coverage near ferry terminals, parks, major attractions, and high-traffic foot zones to meet and grow demand.

Improve transit connectivity by adding stations near subway entrances and bus stops to support last-mile transportation.

Balance bike circulation by redistributing units from high-drop-off to high-pickup locations to reduce wear imbalance and cut maintenance costs.

View full dashboard here.