

Exercise 2.2 – Dashboard Planning and Data Strategy

Dashboard Elements and Visualizations

The dashboard for the New York City CitiBike 2022 project will include the following components:

- Top Stations by Trip Volume: Bar chart showing the 10–20 most frequently used start stations.
- Monthly Trip Trends with Weather Overlay: Line chart showing monthly trip volume with average monthly temperature overlayed.
- Most Popular Routes: Interactive city map plotting the most common start-to-end trip routes with frequency levels.
- Station Distribution Analysis: Integrated on the same map, displaying station locations across NYC to evaluate station spread.

Analysis Questions and Visualization Strategy

To guide the dashboard development and ensure value for stakeholders, the following questions will be addressed:

1. What are the most popular stations in New York City?
 - Visualization: Bar chart showing top 10–20 start stations by total trip count.
 - Rationale: Simple categorical representation to help identify high-demand areas.
2. Which months had the highest number of trips? Is there a relationship with temperature?
 - Visualization: Dual-line chart comparing number of trips and average monthly temperatures.
 - Rationale: Time-series visualization helps identify seasonal patterns and weather-related trends.
3. What are the most frequent routes taken by riders?
 - Visualization: Map showing aggregated route paths between most common origin-destination station pairs.
 - Rationale: Reveals spatial trip behaviors for targeted expansion.
4. Are the existing bike stations evenly distributed across the city?
 - Visualization: Station density map overlay on geographic view.
 - Rationale: Assesses gaps or redundancy in coverage.