Website: https://jbenes3.github.io/ElectricCar/index.html
Code:
Chart 1 & 2: Project.ipynb
Chart 3: ds4200proj.py
Chart 4: avg_range_chart.html
Chart 5: project_plotly.py

Design explanation paragraphs

1. Treemap

A treemap was chosen to represent the proportional relationship between makes and their corresponding models without overwhelming the viewer with excessive detail. To reduce cognitive load, we removed categorical color encoding and used a single, muted color palette so that square size (representing vehicle count) drives interpretation. This minimalist approach makes the hierarchy immediately intuitive while allowing the most common models to naturally draw attention.

2. Bar graph

A horizontal bar chart was chosen for its clarity and effectiveness in comparing categorical data with long names like county names. The chart is sorted in ascending order to visually emphasize King County's dominance without overwhelming the viewer. Neutral color tones were used to maintain focus on the differences in count rather than distract with unnecessary visual embellishments. This format allows viewers to quickly identify both the leaders in EV adoption and the relative scale between counties.

3. Scatter Plot

This scatter plot visualizes the relationship between electric range and base MSRP for different types of electric vehicles. It uses an interactive dropdown to allow users to filter by vehicle type, allowing users to easily compare trends between Battery Electric Vehicles and Hybrids. A brush tool adds interactivity by letting users zoom in on specific regions of the graph. The hover tooltips make the chart intuitive and informative, helping users identify patterns in EV pricing and performance.

4. Bar Chart

An interactive bar chart was built using D3 to visualize average electric vehicle range by model year. The chart includes animated transitions, allowing each bar to load sequentially and emphasize changes over time. Interactive tooltips display the model year and corresponding average range on hover. The chart uses a consistent medium blue color scheme, with bars darkening on hover to indicate interactivity. Axis labels and gridlines improve readability, and the layout is styled within an SVG container to maintain visual balance.

5. Choropleth Map

A choropleth map was created using Plotly to show the distribution of electric vehicles across Washington state counties. The map uses a GeoJSON file of U.S. counties and matches them to EV registration data using FIPS codes. A blue color scale was applied to represent EV counts by county to align with our color scheme, with hover text showing both the county name and exact number of vehicles. The view is focused on Washington state by fitting the layout to the included counties, allowing users to easily explore patterns and compare adoption rates across regions.