

CSC 805 - Data Visualization

Visualization Project - Phase 2

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Wireframe

The visualization will be organized with a home page and four visualization pages as can be shown in Figure 1. The first page will be our landing page, with the second page being the overview of the data we will be presenting. The second page will show charging infrastructure information, followed by EV adoption trends, with the final page showing in-depth city analyses.

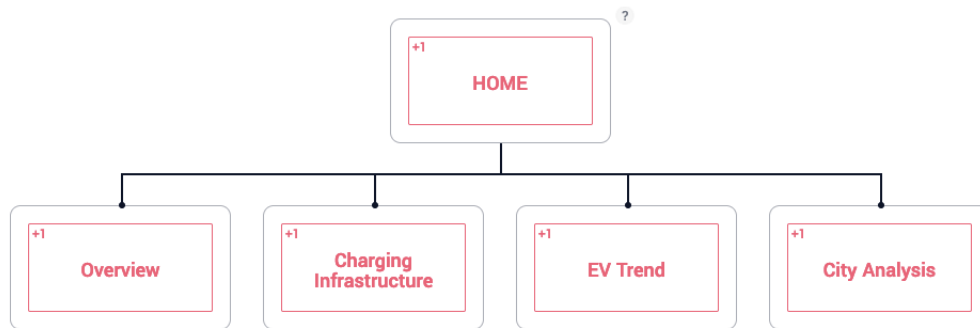


Figure 1: Page Organization Tree

Our home page shown in Figure 2 will contain a short description of our data, our visualizations, and direct the user to the information they are seeking. Finally, the home page will let the user know the purpose of our visualization.

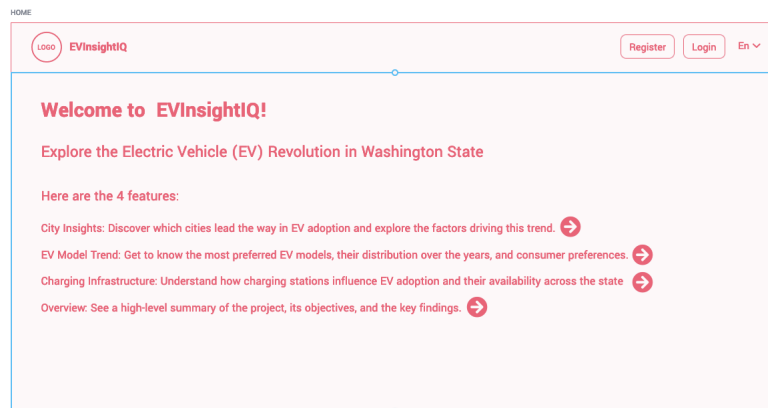


Figure 2: Home Page

The first actual visualization will be our overview. This page (Figure 3) will give a broad understanding of the current number of EV's registered, charging stations, and trends in growth of both. Likewise, we intend to include correlations between these statistics in Washington State and other states in the US where data is available.

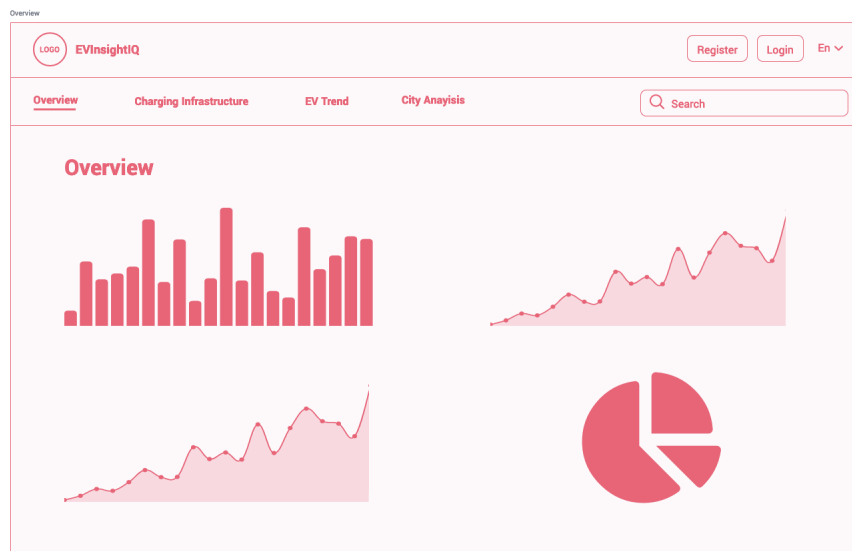


Figure 3: Overview

The second set of visualizations will provide a much deeper look into charging infrastructure. On this page (Figure 4), the user will be able to compare the evolution of the charging infrastructure in Washington State and other states in the US. Likewise, correlations between different states will be able to be seen. Finally, on a timeline graph, the user will be able to see where legislation was put into effect so that the results can be seen with respect to those laws and incentives.

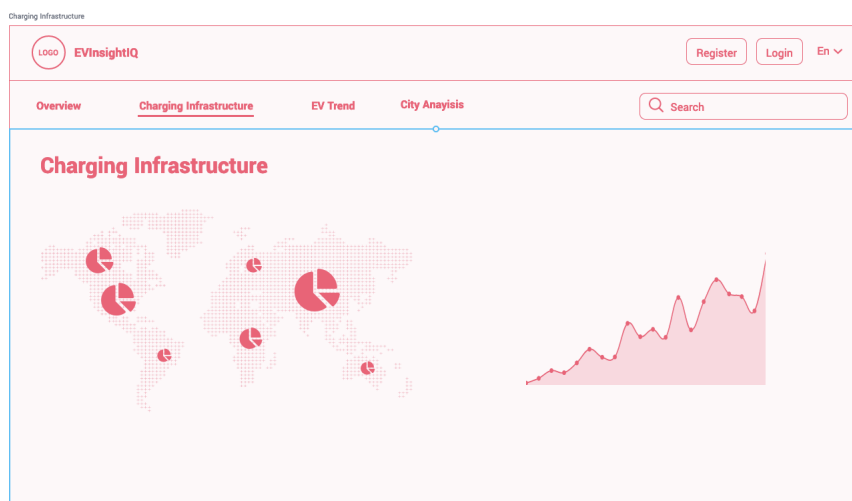


Figure 4: Charging Infrastructure

EV Trends will be able to be seen on this page (Figure 5). Some data that will be available on this page, like the infrastructure page, is the evolution of EV vehicle adoption. Once again, correlations between other state adoptions will be able to be visualized with a timeline with laws and incentives highlighted or tool-tipped.

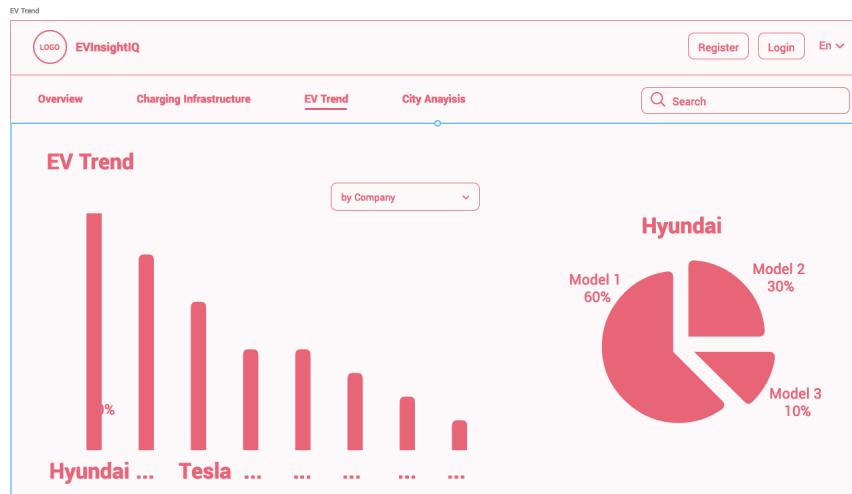


Figure 5: EV Trends

Finally, we will have a detailed city analysis page (Figure 6). This page will contain detailed information on EV adoption in the city and charging infrastructure. Furthermore, one will be able to see a ranking of the city versus other cities in the state as well as other cities located in other states. The user will also be able to compare infrastructure growth and EV adoption timelines with other cities and the mean adoption rates.

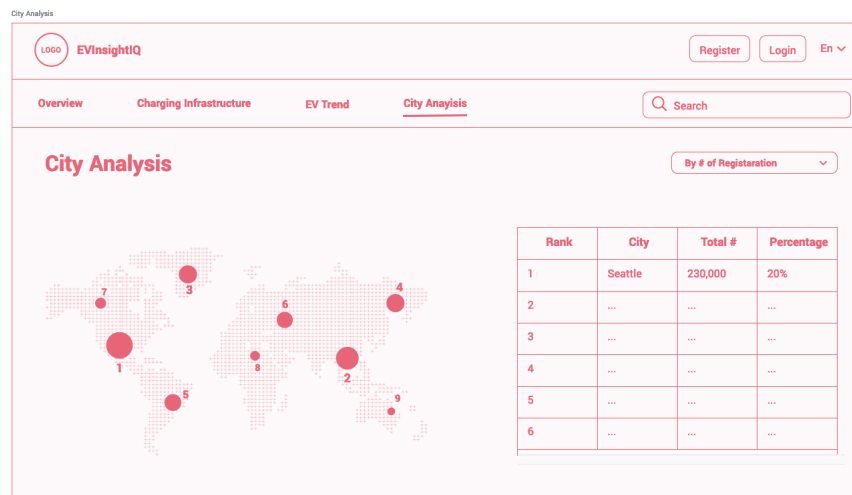


Figure 6: City Analysis

Data

Preprocessed and Cleaned

[GitHub Repository of Data](#)

Source

[Washington State Electric Vehicle Population Data](#)

[Alternative Fuel Stations By State \(Updated 10-12-2023\)](#)

[Washington State EV Laws and Incentives](#)

[EV Registration Data By State](#) (This is a massive data set and requires further cleaning and integration):

- | | | | |
|----------------|---------------|--------------------|---------------|
| 1. California | 5. Maine | 9. New York | 13. Texas |
| 2. Colorado | 6. Minnesota | 10. North Carolina | 14. Vermont |
| 3. Connecticut | 7. Montana | 11. Oregon | 15. Virginia |
| 4. Florida | 8. New Jersey | 12. Tennessee | 16. Wisconsin |

Technologies

- User Interface (UI): React
- Data Visualization: Tableau
- Data Source Handling: Incorporating CSV files within the project
- Hosting: GitHub for static website hosting

We plan to build the website using React, which offers a dynamic and interactive web-based environment. For data visualization, We will leverage Tableau, a powerful tool known for its effective data representation capabilities. To access the data, we will incorporate CSV files directly into the project, ensuring easy and seamless data retrieval. In terms of hosting, we have chosen to host the static website on GitHub. These selected technologies and platforms align well with our goal for an efficient and engaging visualization system.