Concrete Jungle - New York State Traffic Visualization

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Introduction

In this project, we propose to create an interactive data visualization system. The proposed system will provide a comprehensive insight into the traffic of New York State. On the main page of the system will contain an interactive map of the state of New York, where the user can select a specific county.

After selecting a county, the user will be redirected to a new page. This page will contain general information about the selected county in addition to different plots and graphs. These will convey different traffic information.

The goal of this project is to create an easy to understand system that shows traffic information for specific counties in New York State. It should be interactive to keep the user interested.

Datasets

- Dataset
  - Annual Average Daily Traffic:
    https://data.ny.gov/Transportation/Annual-Average-Daily-Traffic-AADT-Beginning-1977/6amx-2pbv?fbclid=IwAR266CHyvwVTcTjJPXQUG10qtyQKu8NLxK1z9qHpjr31bcfzp8SSozCawU8
  - Air quality for New York State:
    https://aqicn.org/data-platform/register/?fbclid=IwAR21hrX-qF5UX-13xR7ff-1D7LUwdcz3r_2C053b5p_8P7TptgXoqCJML9M
    New York State county information:
    https://en.wikipedia.org/wiki/List_of_counties_in_New_York

- Data Pre-processing
  - Remove outdated data to enhance web page performance.
  - Categorize traffic data by road type (state, county, and others), and specify if it includes bridges or rail crossings.
  - Transform daily air quality data into annual averages.

Plots

- New York State county map
  - Display county names on mouse hover.
  - Enable user interaction for detailed information on specific counties. And show more detail when users click.
- Correlation matrix
    Illustrate the correlation between pollution level and traffic volume.
- Theme River
  - Visualize the correlation between traffic and pollution over the years.
- Line Plot

- ○ Present the average traffic over time.
  - ○ Break down the average traffic by road types: state roads, county roads, and other roads.
- ● Stacked Bar Charts
  - ○ Show three kinds of roads (state roads, county roads, and other roads).
  - ○ Highlight road types on mouse hover.

Color palette

In this project, we plan to use a predefined color palette to make the plots look consistent and aesthetically pleasing. This can improve the way the plots are conveyed to the users. The colors palette we have selected is in a range between the colors #003f5c and #ffa600.

| #003f5c | #2f4b7c | #665191 | #a05195 | #d45087 | #f95d6a | #ff7c43 | #ffa600 |

Suggested final look

- ● home page

- ● after user click