INFO 5100 Project 2

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Project Overview and our story

Welcome to the New York City Interactive Restaurant Map, a tool designed to help you explore the vibrant culinary culture of New York City. This map not only showcases the diversity of restaurants across the city but also integrates the locations of Michelin-starred establishments and NYC health inspection results. With this interactive map, you can easily see the distribution of different restaurant types, pinpoint Michelin-starred restaurants, and even dive into ratings and health inspection scores.

We all know that New York City's dining scene is famous for its diversity and richness. This project aims to make exploring that world both fun and intuitive, letting you virtually "walk through" the city's food landscape. Whether you're looking for a specific type of cuisine, restaurants within your budget, Michelin-starred hotspots, or just want to check out the health scores of local eateries, this map has all the answers you need.

If you're feeling less optimistic, we've included ~300 restaurants that recently received health inspections, as well as what the letter grade result of those inspections were.

Description of the data

For this project, we utilized 4 datasets, each originating from the following sources:

NYC topojson file
Source: Census - Download and Metadata
We got the New York city topoJson file from the NYC government.
Purpose: We want to mark the restaurants in the map, so we need to draw a New York city map. This file is to create the map.

NYC Restaurant Diversity Data
Source: Kaggle Dataset - NYC Restaurants
We got this dataset in Kaggle. This dataset contains information on restaurants in NYC, with a lot of variables. We cleaned it by keeping the columns: name, street_address, restaurant_type, food_review, price_range, latitude, longitude. To help us create the map better, we also add a column borough to it, according to the postcode in the original raw dataset.
Purpose: The primary focus of this dataset is to showcase the cultural and culinary diversity of NYC's restaurant scene.

Michelin-Starred Restaurants Data
Source: Kaggle Dataset - Restaurants in NYC - MICHELIN STARRED
We got this dataset in Kaggle. In the raw data, it contains columns: name, address, city, state, description, star, full_address, and postal_code. However, to mark the restaurants in the map, we need the longitude and latitude. Then, we convert the full_address into longitude and latitude.
Purpose: This dataset highlights the locations of Michelin-starred restaurants in NYC and their star ratings, providing an in-depth look at where these prestigious establishments are concentrated.

NYC Health Inspection Results Data
Source: DOHMH New York City Restaurant Inspection Results | NYC Open Data
Original Source: NYC Open Data - DOHMH New York City Restaurant Inspection Results
Purpose: This dataset showcases the health inspection results of various NYC restaurants, enabling users to make informed choices about dining options from a public health perspective.

Overview of our visual design rationale

We chose maps to represent our data. This is because we are creating a map with New York city restaurants marked on them. With the use of a map, we can easily see and understand the information of restaurants on the map. And also, the map helps us clearly see the distribution of restaurants.
For each restaurant, we represent it as a circle. When the mouse hovers over the circle, we can see detailed information about them, such as the restaurant's name and address. For the Michelin-starred restaurant, we use stars symbols to represent, in order to distinguish them from regular restaurants.
In the NYC restaurants with Michelin-starred restaurants map, we use different colors to represent each type of restaurant. This way, if someone wants to try a specific type of restaurant, they can find it by looking for the color, and hover over it to see more detailed information. For the Michelin-starred restaurants, we use 3 different colors, which are yellow, orange and red, to represent different restaurants with different numbers of stars.
For the map, there are 5 different boroughs in New York City, so we use 5 different colors to represent these boroughs to make the map look nicer.
For restaurants in Manhattan, we made the radius of the circles slightly smaller due to the sheer volume of dots.

Overview of our interactive elements and their design rationale

We mainly use **mouse hover** interactions, when we move the mouse over a dot or a star, we can view detailed information about the restaurant. When we mouse over a dot, a rectangle text box is created with detailed information of the restaurants, such as name, address, restaurant type, and so on.

We also added a **filter** interaction that allows us to filter restaurants by type, price_range, and so on. In this way, people can easily find the restaurant they might prefer. The filtering on the map for health inspections allows users to filter by borough and health inspection grade.
We also added **zoom and pan** interaction that allows the map to zoom in and out. We noticed that there are much more restaurants in Manhattan than in any other boroughs. A lot of restaurants are located nearby in Manhattan. The dots might look a little bit crowded in this way. We added this function to make the map larger so we can better see and distinguish these restaurants.

Why Use Two Maps?

During development, we realized that the themes of the Michelin data and the health inspection data are significantly different. Trying to combine them into a single map would complicate the user experience, making it harder to focus on a specific topic. To address this, we decided to use two separate maps with a link to navigate between the two, allowing each map to focus on a clear and distinct theme:

Culinary Excellence Map:

- Designed to be simple and intuitive, this map highlights the geographic distribution of restaurants, including Michelin-starred ones, along with their star ratings.
- It enables users to quickly identify areas that are hotspots for fine dining and high-quality restaurants.

Health Inspection Map:

- This map leans more toward the practical aspects, focusing on health inspection results and compliance.
- It provides a clear visualization of the hygiene standards of different restaurants, helping users make informed decisions based on health compliance.

With these two perspectives, users can easily switch between maps based on their interests, whether they want to explore culinary excellence or prioritize health and safety.

Key Features

1. **Interactive Map Features**
    - **Zoom and Pan**: Navigate the map easily by zooming in and dragging to explore specific areas.
    - **Hover for Details**: Hover over any restaurant marker to view detailed information, including the restaurant name, address, rating, and more.
2. **Custom Filters**
    - **Michelin Map Filters**:
        - Filter restaurants by their price range or by cuisine type (e.g., Asian, French).
    - **Health Inspection Map Filters**:

        - Filter restaurants based on their health inspection scores to quickly identify those that meet hygiene standards.

Team Contributions

Menghan:

- Cleaned the Michelin-starred restaurant dataset.
- Convert restaurant addresses into geographic coordinates.
- Developed the Michelin Map and marked them on the map.

Sasha:

- Cleaned and integrated the health inspection dataset.
- Filtered down the massive health inspection dataset to about 300 restaurants, focusing on inspections with complete data (some entries had empty columns) and those that were performed in 2024.
- Developed the Health Inspection Map and its health score filters.
- Created the initial NYC topographic map, using data from the NYC government website.
- Combined the two maps so that one is accessible from the other.

Zhiqi:

- Cleaned and merged the NYC restaurant diversity dataset.
- Implemented interactive map features such as hover effects and click actions, along with restaurant-specific filters.
- Contributed to the development of the Health Inspection Map and its health score filters.

Conclusion

Our goal has always been to provide a comprehensive view of New York City's restaurants, showcasing both their diversity and health standards. The dual-map design allows us to explore the city's dining culture from two distinct perspectives. With the first map, users can visualize the geographic distribution of various types of restaurants, including Michelin-starred establishments. Meanwhile, the health inspection map offers a public health perspective, helping users evaluate restaurants based on their compliance with hygiene standards. This flexible approach makes it easier to interpret and engage with two very different but equally important datasets.