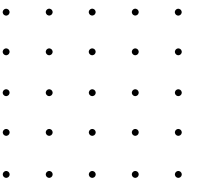


NY Restaurant Inspection and Violation

Use Tableau to create a dashboard that enhances awareness of food safety among government officials and residents in New York counties.

Xinyue Hu



01

Introduction

- What kind of product do I aim to launch?
- Why did I choose Tableau for this project?
- How did I select and prepare the data for analysis?
- What challenges did I encounter during the process?

02

Process

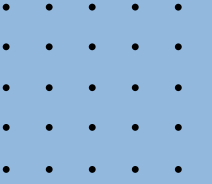
- How did I make this dashboard?
- What functions in this dashboard can help me achieve my proposed goals?

03

Next Step

- Add NYC content
- Incorporate Python to predict future inspection results





01

Introduction

- Problem, proposed goals, and solution
- Data selection
- Challenges



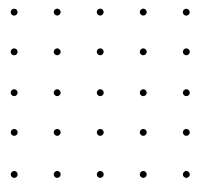


This data includes the name and location of food service establishments and the violations that were found at the time of their last inspection. Although violation details are collected on inspection reports (i.e., the actual food item, quantity and temperature of food found out of temperature control) as well as corrective actions for critical violations, this data set is limited to the violation number and the corresponding general violation description. This dataset is for reporting purposes only. Any concerns about individual establishments should be referred to the corresponding Local Health

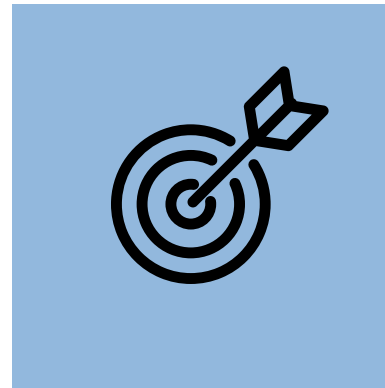
[illegible]

There are also **no filtering** options to focus on specific areas, types of violations, or the portion of violations.





Proposed Goals



Increasing the **awareness** and **accessibility** of Inspection Results

The government can identify regions with the **highest** number of violations and analyze the **frequency** of specific types of violations.

Residents can **easily access** inspection information for restaurants in their living area and conveniently **submit complaints** to the government.



Solution: Dashboard

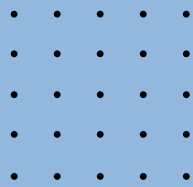


Data Visualization

I created an interactive dashboard by Tableau. The dataset comes from the official inspection results of restaurants across all counties in New York State. This dashboard allows users to **easily access specific county data, identify the most frequent violations, or search for detailed information about specific restaurants** and their associated corporations.

Interactive charts and maps enable users to click on specific regions or categories to drill down into detailed data, such as the frequency of certain violations in a selected county. Users can customize their view by toggling between different metrics (e.g., total violations, critical violations, or non-critical violations) to gain deeper insights.

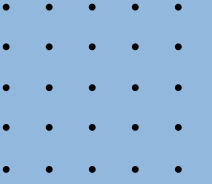
Challenges



Data Selection

At first, I planned to use official data from Los Angeles officials for the project. However, while preparing the data, I found it was missing key information needed for map visualization, like postal codes and geographic longitudes. Also, the dataset didn't provide detailed descriptions of violations, which meant that the final outcome would only be able to display food safety scores.

inspections					
HANCOCK REGENCY CONDO	2022-11-29		326 S WESTMINSTER AVE	LOS ANGELES	PR0031430
ARIEL COURT APTS SPA POOL	2020-01-31		535 GAYLEY AVE	LOS ANGELES	PR0051541
B AND B CORPORATION	2024-06-06	99	7782 SAN FERNANDO RD	SUN VALLEY	PR0138220
LOWE'S #1852	2023-09-06	100	13500 PAXTON ST	PACOIMA	PR0130707
AFC SUSHI @ RALPH'S # 55	2024-04-30	100	521 W FOOTHILL BLVD	LA CANADA FLINTRIDGE	PR0160430
THE LOOP	2024-08-27	98	1100 W COVINA BLVD	SAN DIMAS	PR0137234
WILSHIRE BORGATA SPA POOL	2023-05-31		12222 WILSHIRE BLVD	LOS ANGELES	PR0054471
LA VERNE CAR WASH	2024-07-20	97	914 W FOOTHILL BLVD	LA VERNE	PR0034937
NEWCASTLE GARDENS SPA POOL	2020-06-15		5461 NEWCASTLE AVE	ENCINO	PR0060647



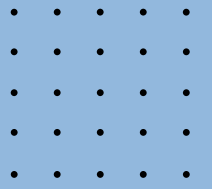
02

Process

- Data preparation
- Visualization
- Filters



Data Preparation



The screenshot displays the 'HEALTH.DATA.NY.GOV' website. The top navigation bar includes 'Services', 'News', and 'Government'. Below this, a dark blue header contains the website name and a 'Menu' button. A secondary navigation bar has 'About', 'Data' (selected), and 'Related Content' tabs, along with 'Actions' and 'Export' buttons.

The main content area is titled 'Food Service Establishment: Last Inspection'. It features a table with columns: FACILITY, ADDRESS, COUNTY, PERMIT, EXPIRATION DATE, and PERMITTED. The table lists two establishments: 'DUNKIN DONUTS - 667 LOUDON RD.' in Oneida County and 'ST. BONAVENTURE FRANCIS CAFE' in Livingston County.

Overlaid on the right side of the table is a Jupyter Notebook interface. The code in the notebook performs the following steps:

```
[ ] data_cleaned = df.dropna(subset=['FACILITY', 'ADDRESS', 'LAST INSPECTED'])  
[ ] print("\nMissing Values:")  
[ ] print(df_cleaned.isnull().sum())  
Missing Values:  
Restaurant Name      0  
Inspection Date      0  
Inspection Grades    0  
Address              0  
City                 0  
Case Number          0  
dtype: int64  
[ ] extracted_data = data_cleaned[['VIOLATIONS', 'NYS HEALTH OPERATION ID']]  
output_file_path = 'output.csv'  
extracted_data.to_csv(output_file_path, index=False)
```

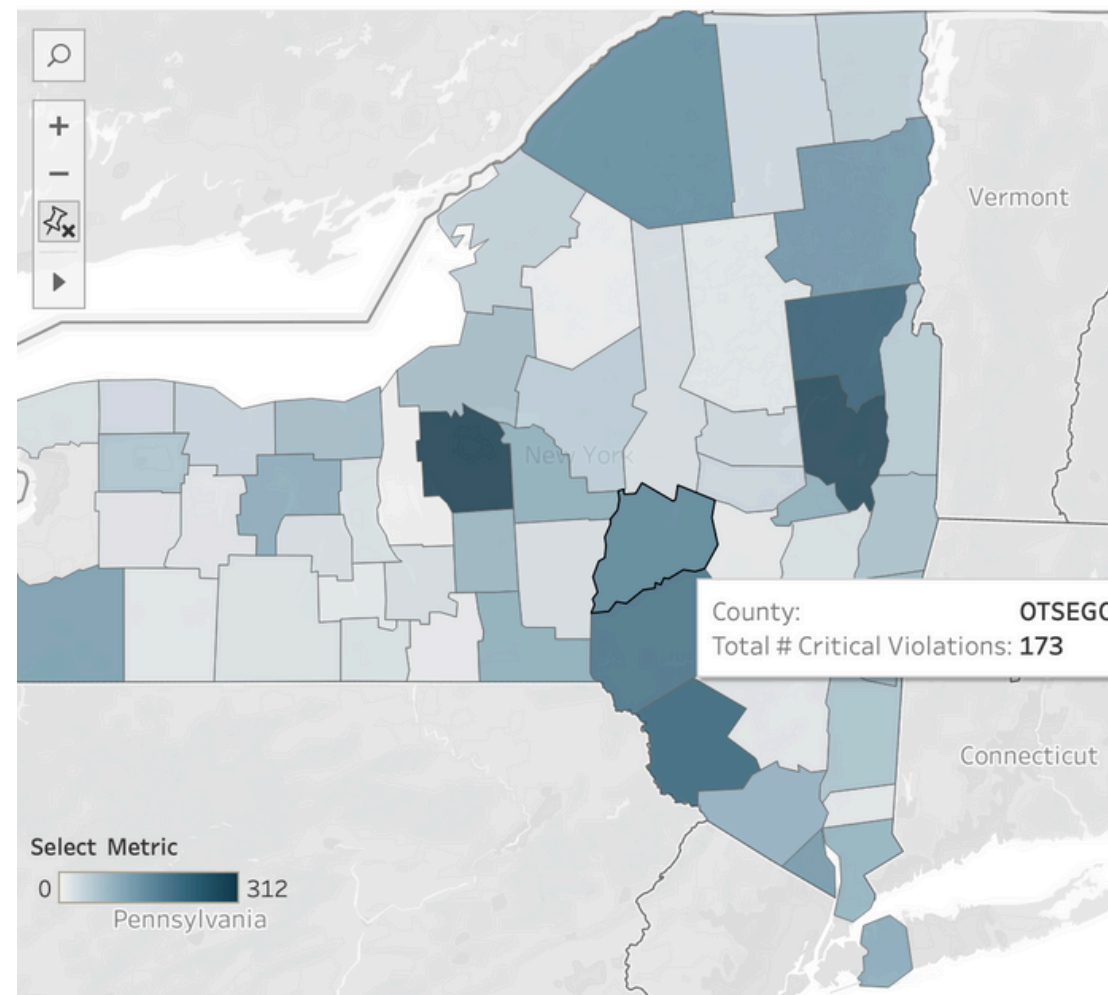
- Conducted data sourcing from official government websites
- Clean the data and deal with the missing value
- Extracted **[Violations]** and **[NYS Health Operation ID]** for further analysis and integration

01

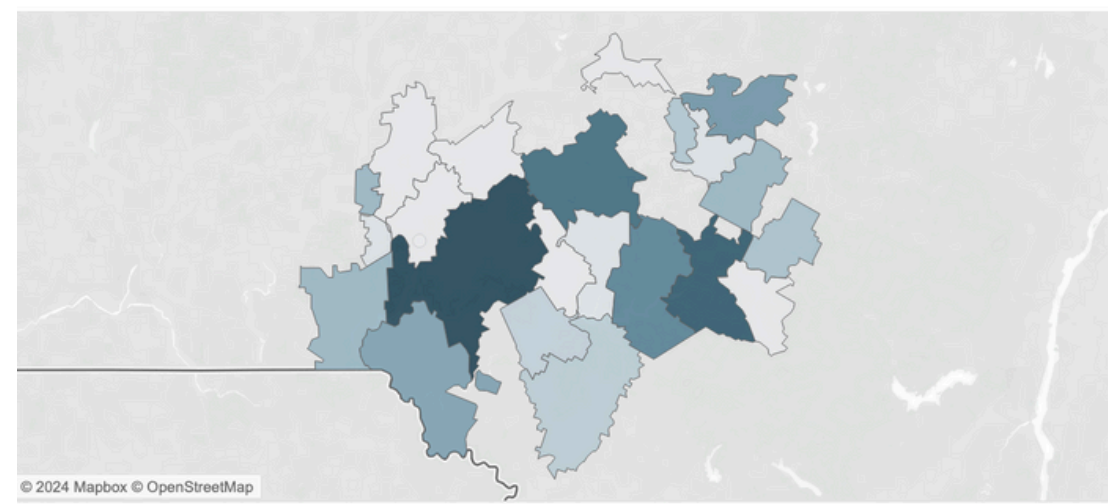
Map

- Color Coding
- Highlights the conditions in specific areas based on ZIP codes
- Integration of multiple data layers

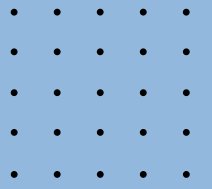
Total # Critical Violations by **County**



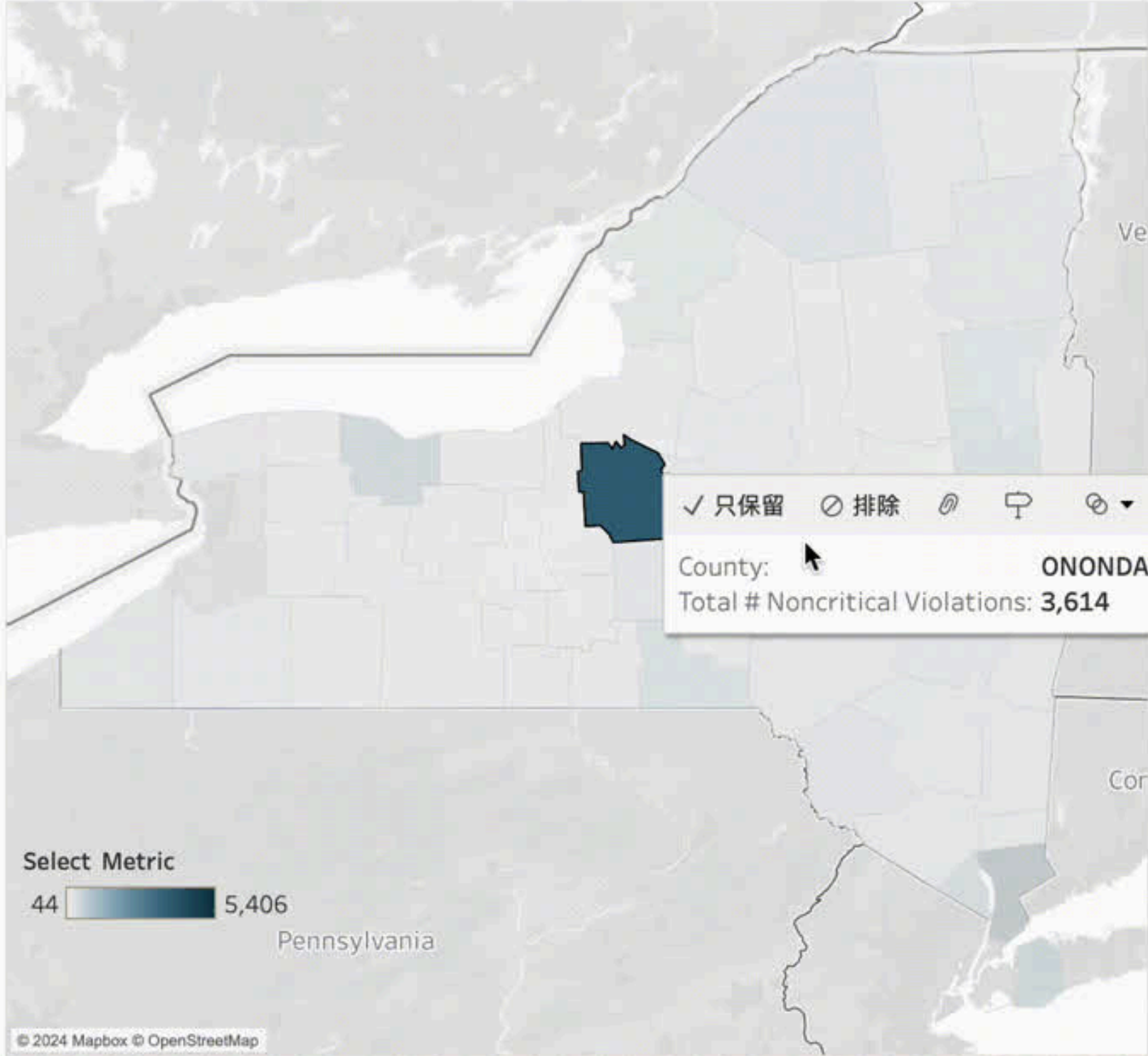
Total # Critical Violations by **Zip Code**



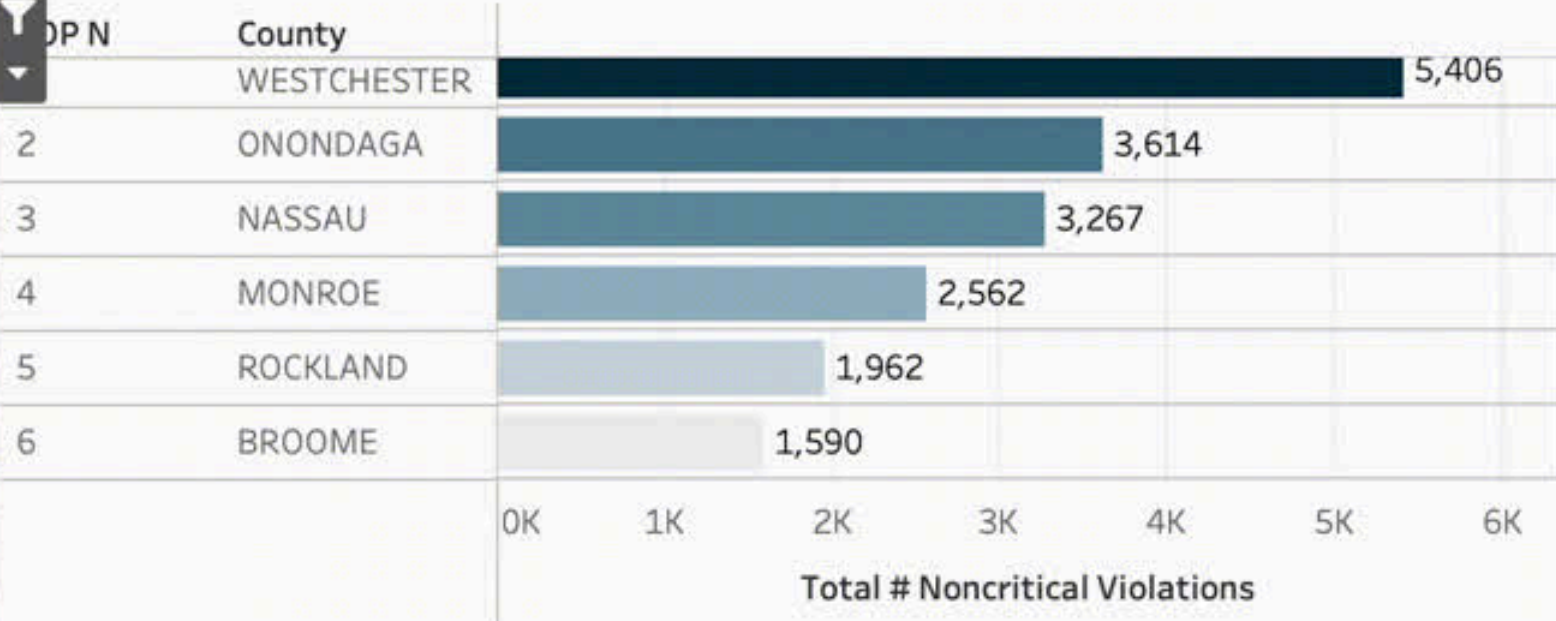
Visualization



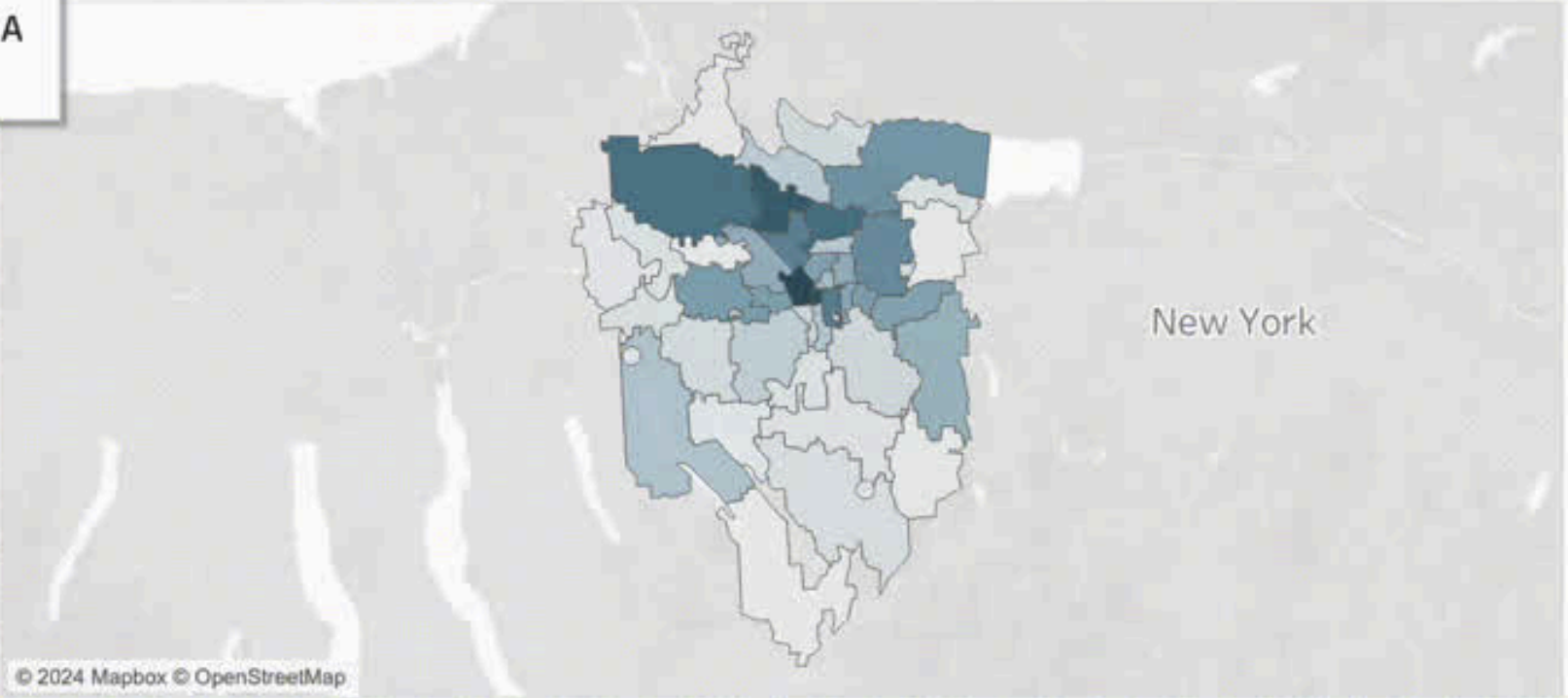
Total # Noncritical Violations by County



Top 6 counties by Total # Noncritical Violations



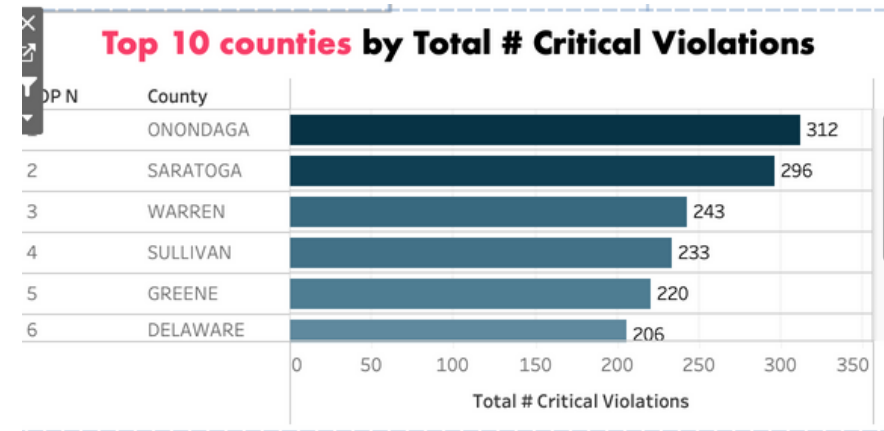
Total # Noncritical Violations by Zip Code



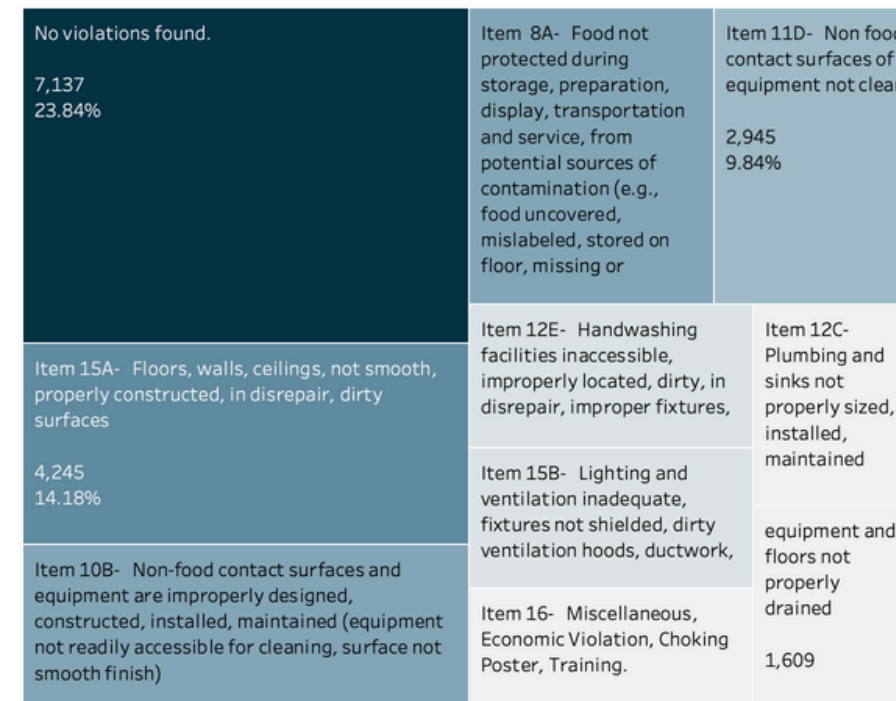
02

Charts

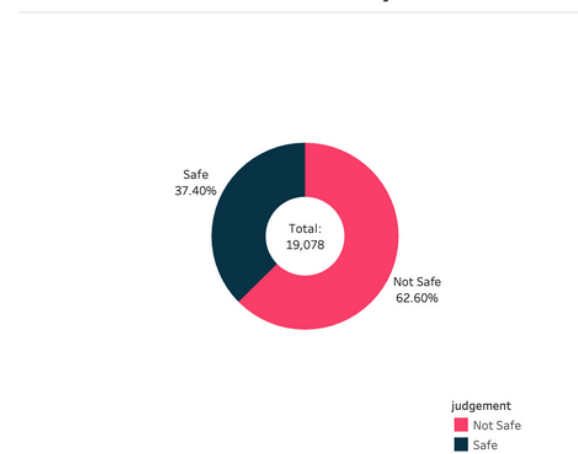
- Bar chart / Marimekko chart / Pie Chart / Line Chart...
- Compare metrics across categories



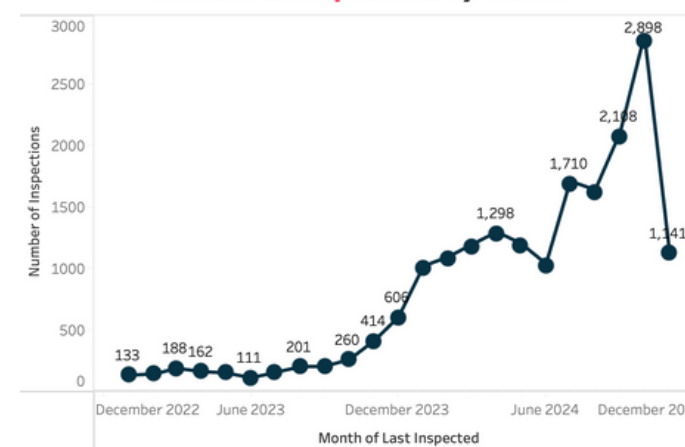
Frequency of Violation Types



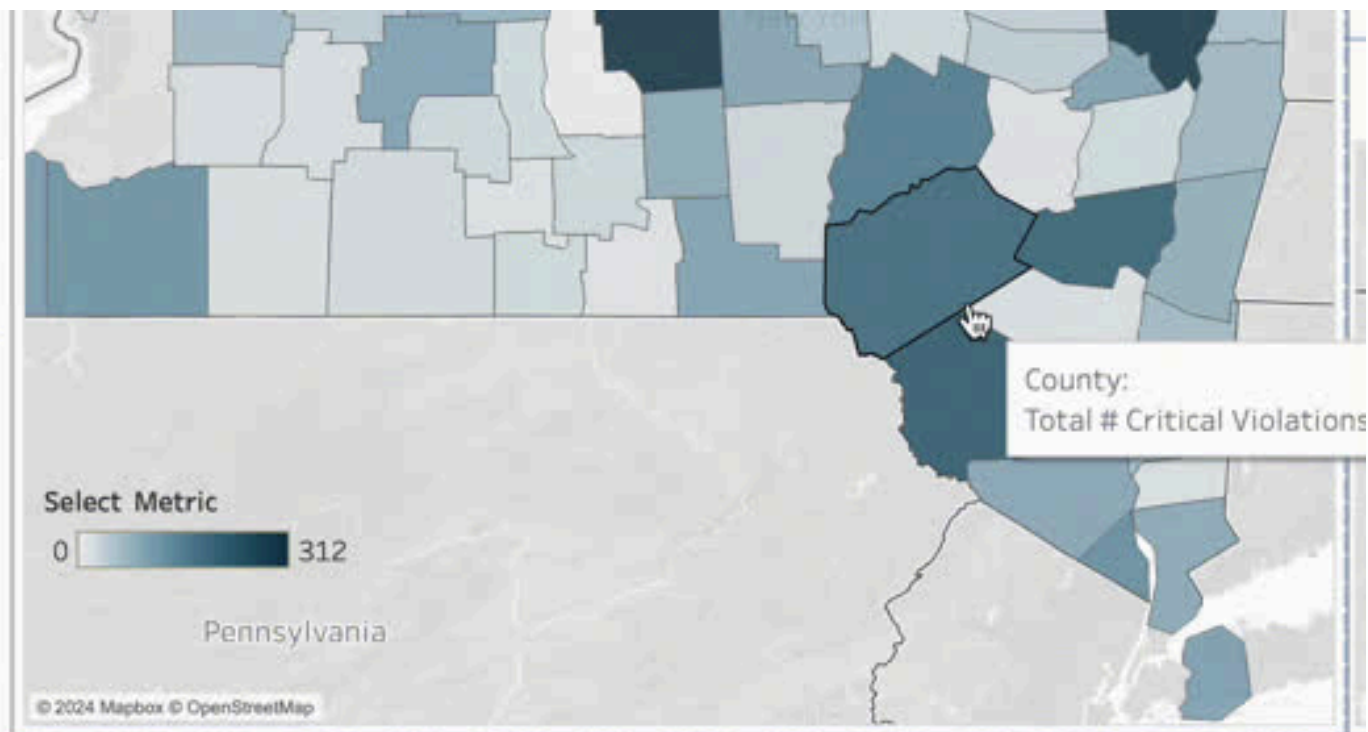
Violation History



Number of Inspections by Month

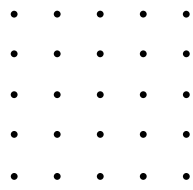


Visualization

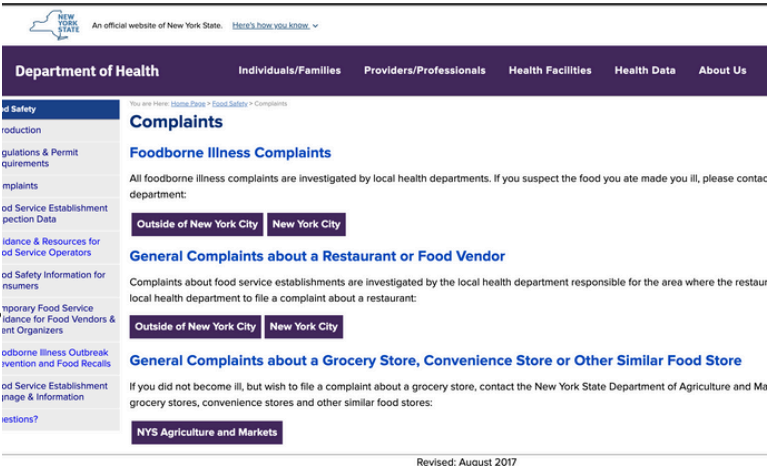


Frequency of Violation Types

<p>No violations found.</p> <p>7,137 30.75%</p>	<p>Item 10B- Non-food contact surfaces and equipment are improperly designed, constructed, installed, maintained (equipment not readily accessible for cleaning, surface not smooth finish)</p> <p>3,461 14.91%</p>	<p>Item 8A- Food not protected during storage, preparation, display, transportation and service, from potential sources of contamination (e.g., food uncovered, mislabeled, stored on floor, missing or inadequate sneeze guards, food containers double stacked)</p>
<p>Item 15A- Floors, walls, ceilings, not smooth, properly constructed, in disrepair, dirty surfaces</p> <p>4,245 18.29%</p>	<p>Item 11D- Non food contact surfaces of equipment not clean</p> <p>2,945 12.69%</p>	<p>Item 12E- Handwashing facilities inaccessible, improperly located, dirty, in disrepair, improper fixtures, soap, and single service</p>



Filters



Select Metric

Total # Critical Violations

TOP N

10

Issue Type

(全部)

Last Inspected Date

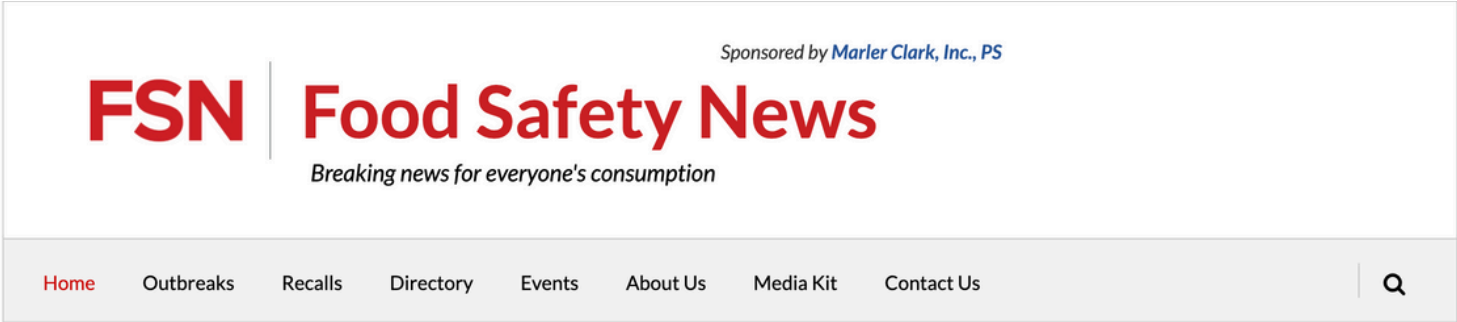
November 2022

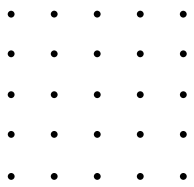
November 2024

Complaints

Food Safety News

I added several filters to the dashboard to make it more user-friendly. Users can choose metrics like critical or non-critical violations and view rankings. This allows the government to easily identify which counties need the most attention for food safety issues.





Filters

December 2022

June 2023

December 2023

June 2024

December 2024

Month of Last Inspected

2023

2024

Month of Last Inspected

View more detailed information

Nys Health ..	Permitted Corp. Name	Facility	Perm. Oper..	Perm. Oper..	Address	Crit. Not Corrected	Critical Violations	Noncritical Violations
904799	Chipotle Mexican Grill of C..	Chipotle Mexican ..	Null	Null	3600 WEST Genesee STREET, ..	0.000	0.000	1.000
1032826	Chipotle Mexican Grill of C..	Chipotle Mexican ..	Null	Null	7944 Brewerton ROAD, Cicero	0.000	0.000	1.000
1074985	Chipotle Mexican Grill of C..	CHIPOTLE MEXIC..	Tim	Luskin	521 MAIN STREET, HIGHLAND..	0.000	0.000	0.000
1079512	Chipotle Mexican Grill of C..	Chipotle Mexican ..	Null	Null	406 Towne DRIVE, Fayetteville	0.000	0.000	0.000
1117304	CHIPOTLE MEXICAN GRILL..	CHIPOTLE MEXIC..	AMANDA	MARONEY	2727 WEST STATE STREET, OL..	0.000	0.000	0.000

✓ Chipotle Mexican Gri...

✓ CHIPOTLE MEXICAN ...

✓ Chipotle Mexican Gri...

✓ CHIPOTLE MEXICAN ...

chipotle

×

▼

CHIPOTLE MEXICAN GRIL...

Chipotle Mexican Grill #4...

CHIPOTLE MEXICAN GRIL...

Chipotle Mexican Grill #3...

Chipotle Mexican Grill #2...

清除列表

At the bottom of the dashboard, I added a filter that allows users to search for a specific restaurant by name and view its inspection data. If the restaurant has a violation history, users can hover over the numbers to see the specific details of the violations.

TOP N

1

Item 11B- Wiping cloths dirty, not stored properly in sanitizing solutions

2

Item 11C- Food contact surfaces not washed, rinsed and sanitized after each use and following any time of operations when contamination may have occurred

3

Item 12E- Handwashing facilities inaccessible, improperly located, dirty, in disrepair, improper fixtures, soap, and single service towels or hand drying devices missing

4

Item 15A- Floors, walls, ceilings, not smooth, properly constructed, in disrepair, dirty surfaces

ROUTE 9W, SAUGERTIES

IN STREET, NEW PALTZ

ROADWAY, KINGSTON

ROUTE 9W, SAUGERTIES

NKER STREET, WOODST..

ROADWAY, ULSTER PARK

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

0.000

1.000

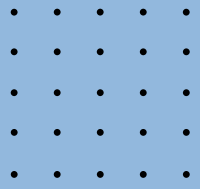
5.000

2.000

0.000

0.000

2.000



Next Step



Add NYC dataset

Since the datasets for New York State and New York City are separate, I will incorporate NYC data later to enhance my dashboard.

Prediction

I've used Tableau's prediction feature to showcase a possible future trend. But I also plan to use GLM model to further predict future inspection results.

Thank You

