



NEW YORK CITY'S RESTAURANT INSPECTION GRADES

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Python, Data Analytics

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INTRODUCTION

Living in New York for nearly two years, I consistently find joy in the diverse and delicious cuisines that the city has to offer. Each time I step into a restaurant, I always notice these large grade letters displayed on the window, and these letters certainly help me in sorting through numerous restaurants across the city. This inspires me to explore New York City's Restaurant Inspection Results dataset.

My research involves identifying high-risk cuisines for food safety violations and understanding the inspection grades through comprehensive inspection data analysis. This research is important for understanding how visible grading systems influence behavior and can drive improvements in food safety practices.





ABOUT THE DATA

- The DOHMH New York City Restaurant Inspection Results dataset can be found on the NYC Open Data website.
- The dataset contains **211,688** restaurants inspected with 27 variables each.
- After cleaning the data set there are around 91,974 restaurants with 26 variables.

METHODOLOGY

- Python Libraries: Pandas, NumPy, Matplotlib, and Seaborn.
- Visualizations: Bar Graphs and Line Graphs.

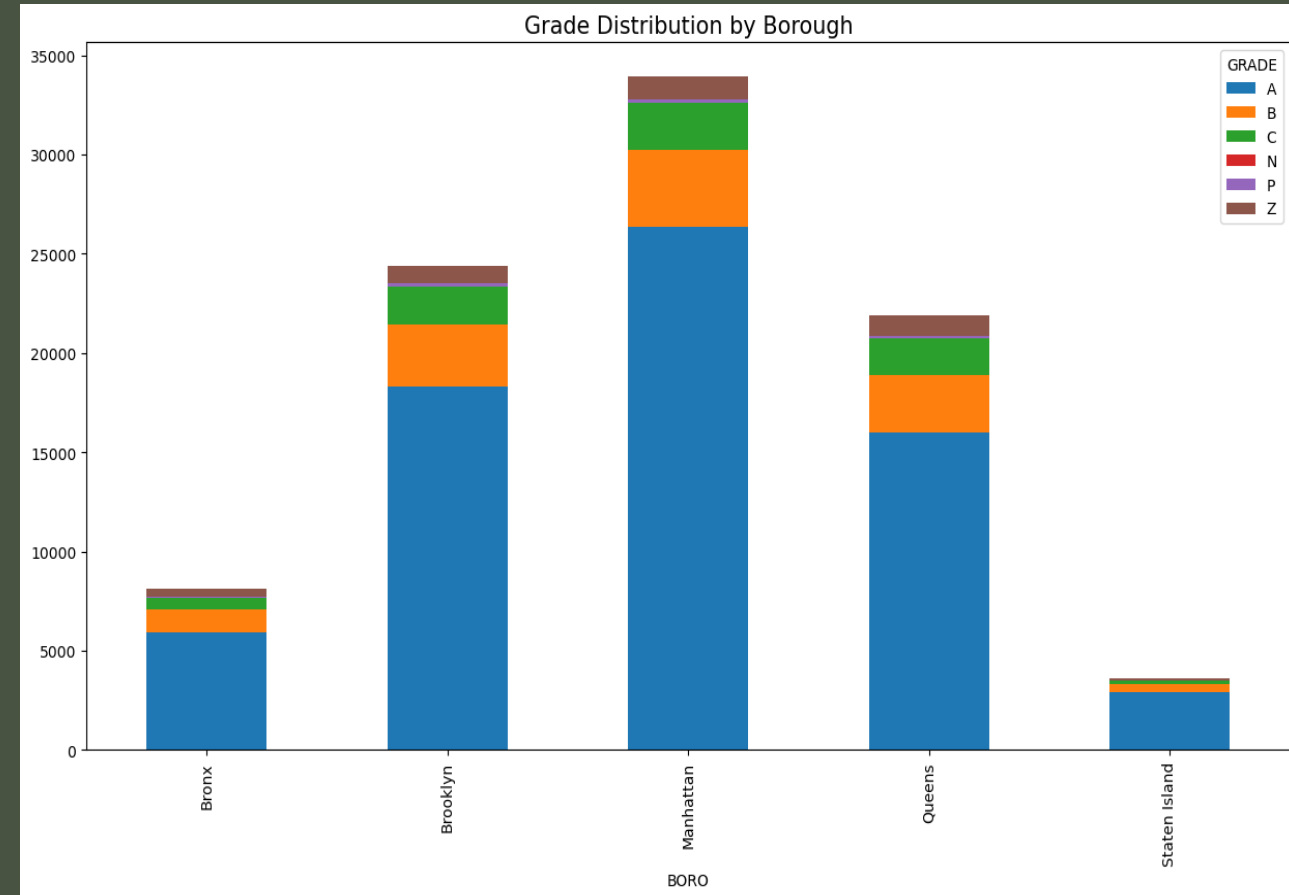
WHY DOES THE HEALTH DEPARTMENT INSPECT RESTAURANTS AND HOW?

- To monitor restaurants' compliance with NYC food safety regulations.
- The Health Department conducts unannounced inspections of restaurants at least once a year.
- Inspectors observe how food is prepared, served, and stored and whether restaurant workers are practicing good hygiene.
- They check food temperatures, equipment maintenance, and pest control measures.

HOW ARE RESTAURANTS GRADED?

- A = 0 to 13 points for sanitary violations
- B = 14 to 27 points for sanitary violations
- C = 28 or more points for sanitary violations
- N = Not Yet Graded
- Z = Grade Pending
- P = Grade Pending

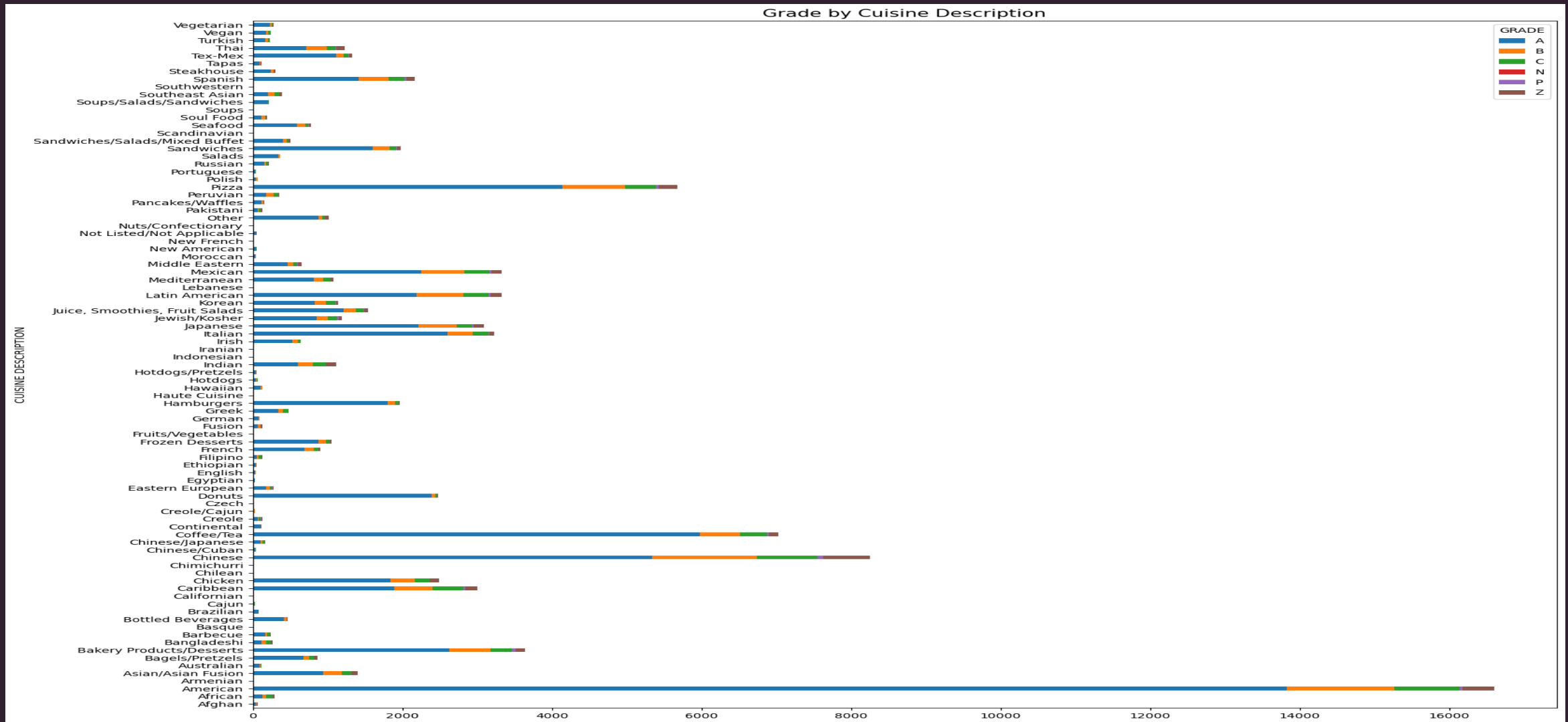
WHAT WAS THE DISTRIBUTION OF HEALTH GRADES BY BOROUGH?



Observation:

- There were mostly Grade A for all boroughs.
- Manhattan has the most restaurants of all five boroughs

WHAT IS THE GRADE BREAKDOWN BY CUISINE?



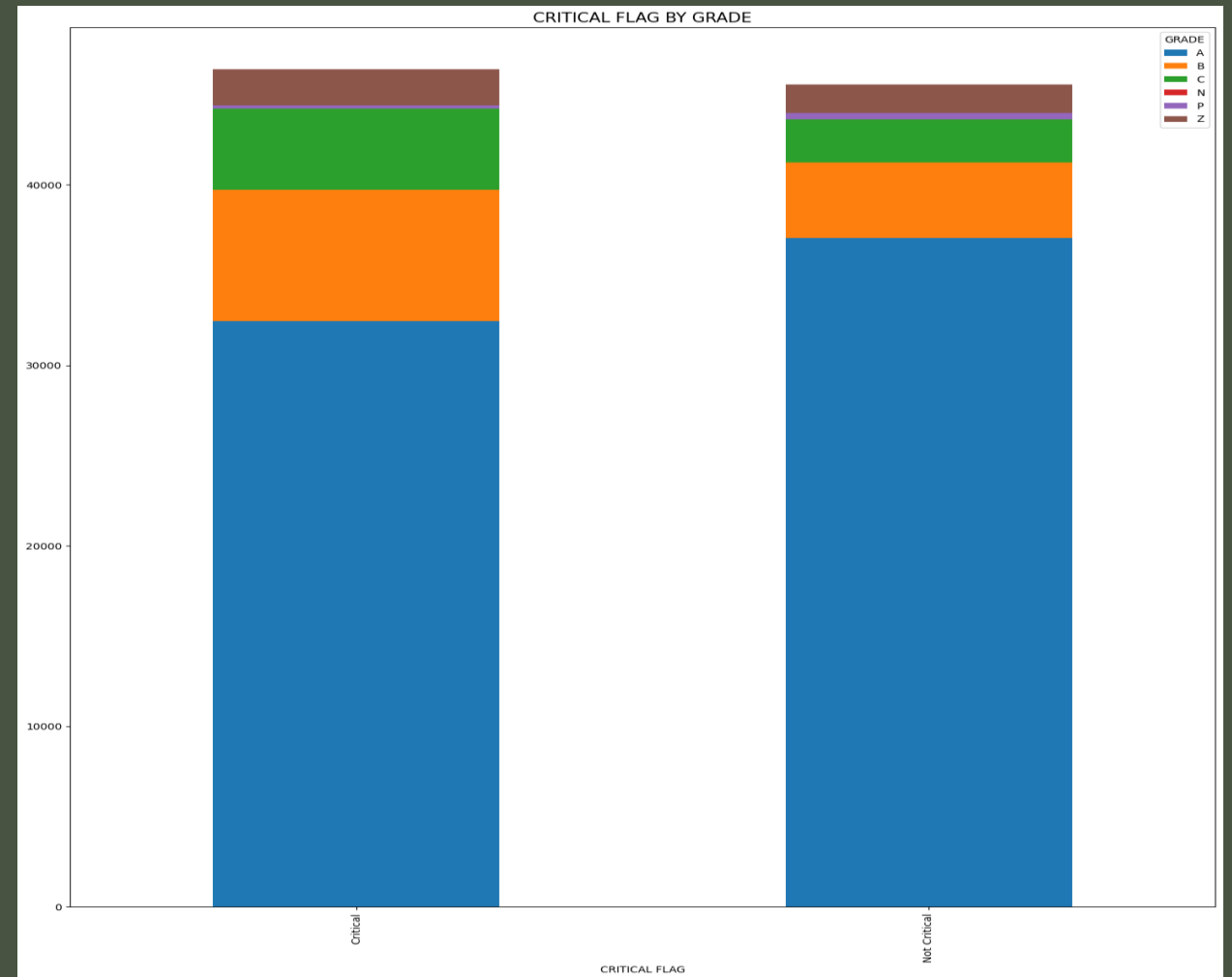
Observations:

- We have 83 cuisines in total and mostly have Grade A's.
- American Cuisine has the highest amount of Grade A, followed by Coffee/Tea, Chinese, Pizza, Bakery Products & desserts.

CRITICAL VS. GENERAL VIOLATIONS

- **Critical violations or Sanitary violations** are more likely violations are those most likely to contribute to food-borne illness.
e.g.: Serving raw food such as a salad without properly washing it first.
- **General violations** are related to the physical set-up of the restaurant itself.
e.g.: Failing to provide an accurate thermometer in a refrigerator.

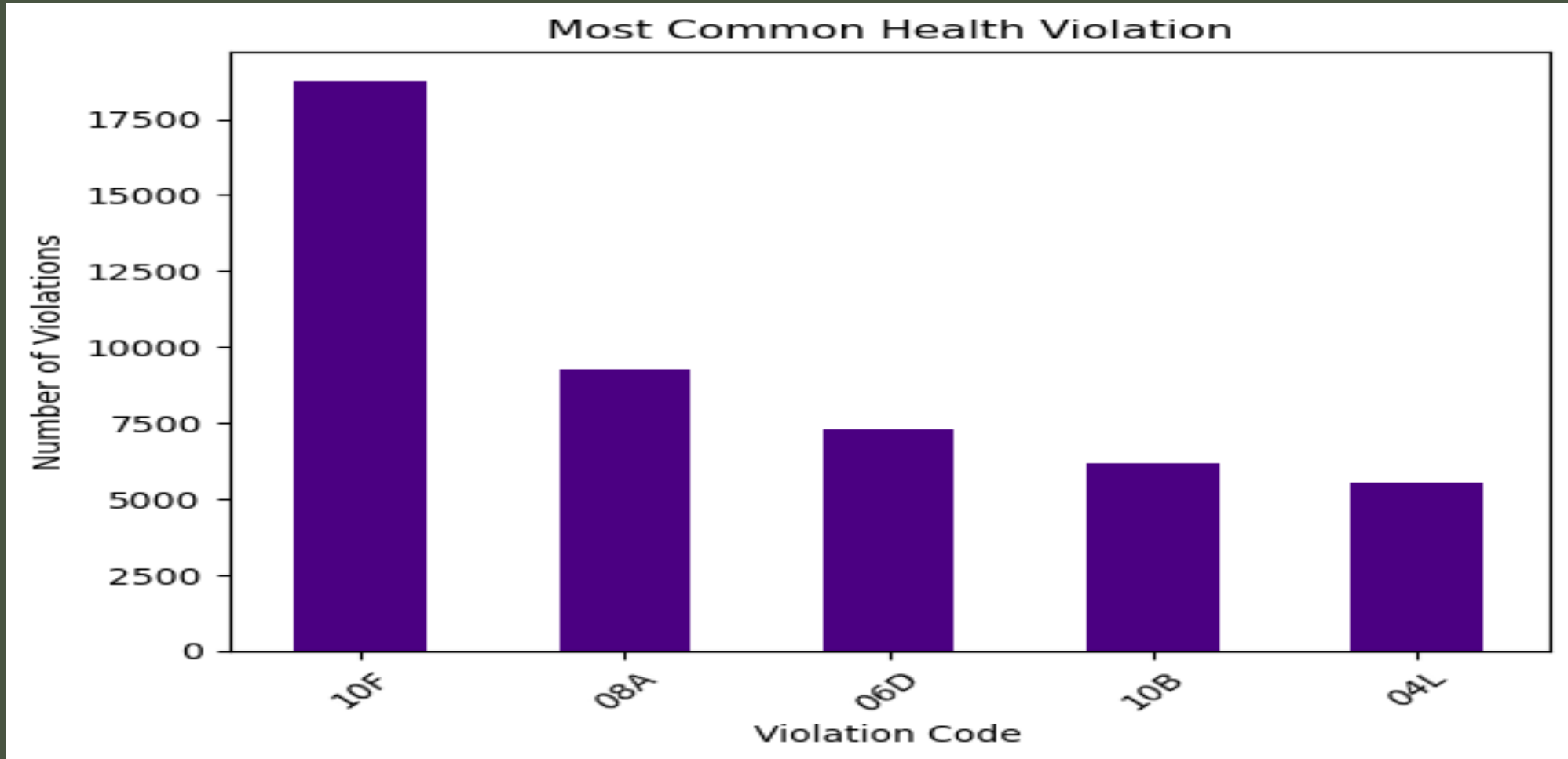
DO GRADE A RESTAURANTS HAVE CRITICAL VIOLATIONS?



Observation:

- Yes

WHAT ARE THE MOST COMMON HEALTH VIOLATIONS OF RESTAURANTS?



Observation:

- The most common health violation is 10F, "Non-food contact surface improperly constructed. Unacceptable material used."
- All these health violations fall under General Violations.



FINDINGS & CONCLUSION

- Manhattan has the highest count of active restaurants and the highest percentage of Grade A establishments, with American Cuisine leading.
- There are about 86 different kinds of Cuisines in all 5 Boroughs.
- Restaurants with Grade A have critical violations that are most likely to contribute to food-borne illness.
- The most common health violation falls under the general violations less serious vs. critical violations.
- For future analysis, I want to know more about which cuisine with Grade A Restaurants & critical flags.
- Health code violations extend beyond mere penalties, they carry broader implications that can significantly affect a restaurant's overall functioning and reputation. The consequences of these violations go beyond financial penalties and may have lasting impacts on various aspects of the establishment.



THANK YOU

References:

<https://www.nyc.gov/assets/doh/downloads/pdf/rii/how-we-score-grade.pdf>

<https://www.nyc.gov/assets/doh/downloads/pdf/rii/blue-book.pdf>

<https://a816-health.nyc.gov/ABCEatsRestaurants/#!/faq>