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# The Stars on the Plate

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# Analyzing Global Michelin Restaurants



# Project Overview:

## Goal

Explore how cuisine type, geography, and pricing relate to Michelin star ratings.

**Dataset Used:** three datasets merged into one master table

- ★ 1-Star Restaurants
- ★★ 2-Star Restaurants
- ★★★ 3-Star Restaurants

**Enriched with:**

- Average price per restaurant (source : Michelin Guide; The restaurants' price ranges index);
- Online review information (API).

- region breakdown
- city
- price point
- price point vs cuisine
- 3 stars territory



# Project Overview:

## Hypotheses :

- region breakdown
- city
- price point
- price point vs cuisine
- 3 stars territory

1. **Cuisine hypothesis:** Some cuisines are more likely to receive 3 stars (e.g., French).

2. **Geography hypothesis:** Large cities have more 3-star restaurants.

3. **Price hypothesis:** Average price increases with star level (1→3).

4. **Michelin stars:** Star level does not always reflect public opinion. ????????



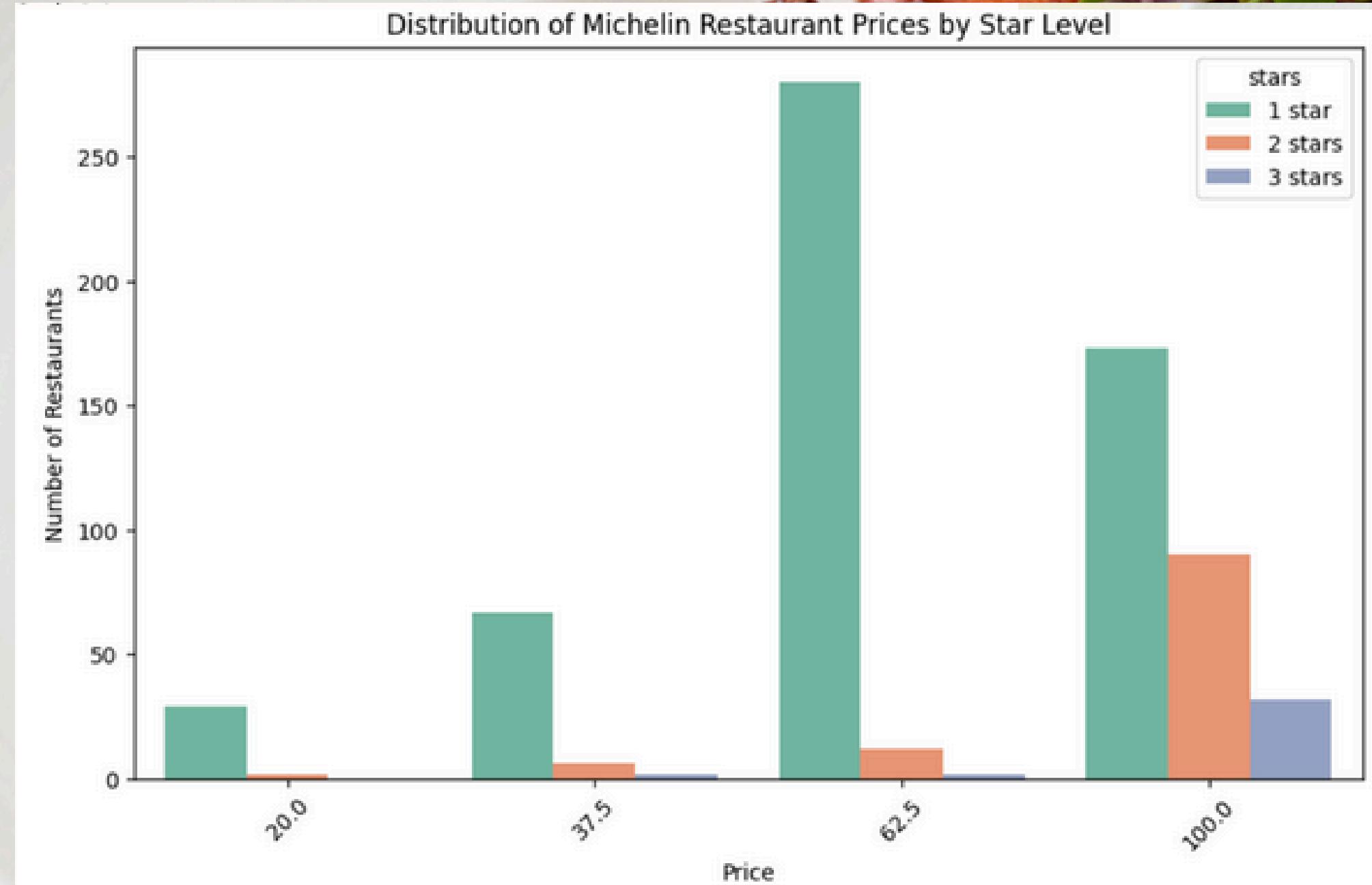
# Data Wrangling and Cleaning

- **Data Integration:** Combined 3 databases through concatenation;
- **Special Characters:** Used 'unidecode' to clean restaurant names of accents and special characters;
- **Cuisine Simplification:** Reduced over 100 cuisine types into ~10 coherent groups;
- **Geographic Organization:** Grouped and ordered suburbs by city and region for clarity;
- **Symbol Inconsistencies:** Fixed entries with too many \$ symbols, removed extra spaces and hidden characters;
- **Converting Dollar Signs to Average Price:** \$ → 20, \$\$ → 37.5, \$\$\$ → 62.5,\$\$\$\$ → 100 ;
- **Handling Missing Prices:** Filled missing values using median price per Michelin star level.

# Exploratory Data Analysis

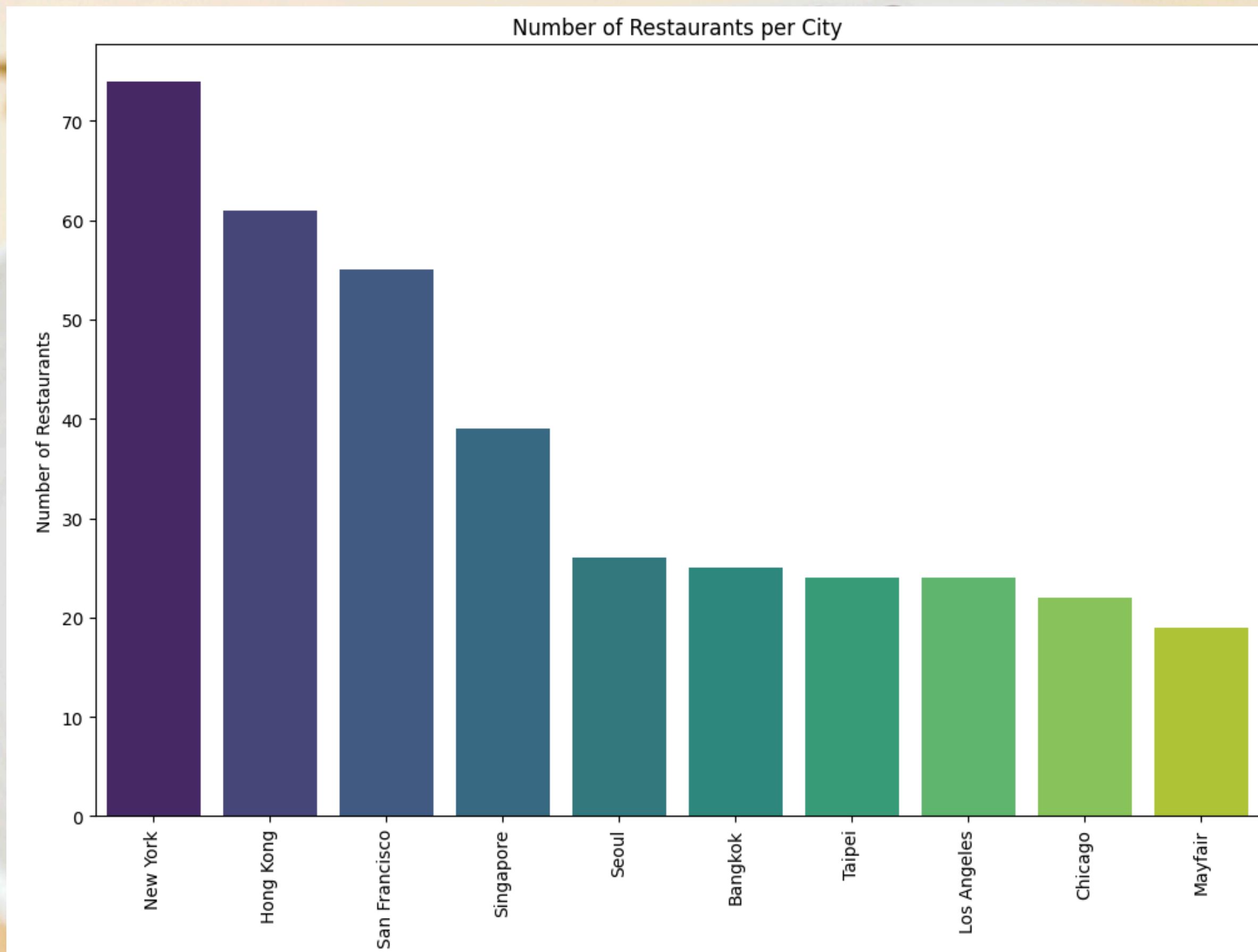
We clearly see that :

**1-star restaurants** dominate the lower price ranges, while **2-star restaurants** appear more frequently in mid-to-high price ranges. **3-star restaurants** are mostly concentrated in the highest price category, confirming that the most prestigious restaurants tend to be the most expensive.



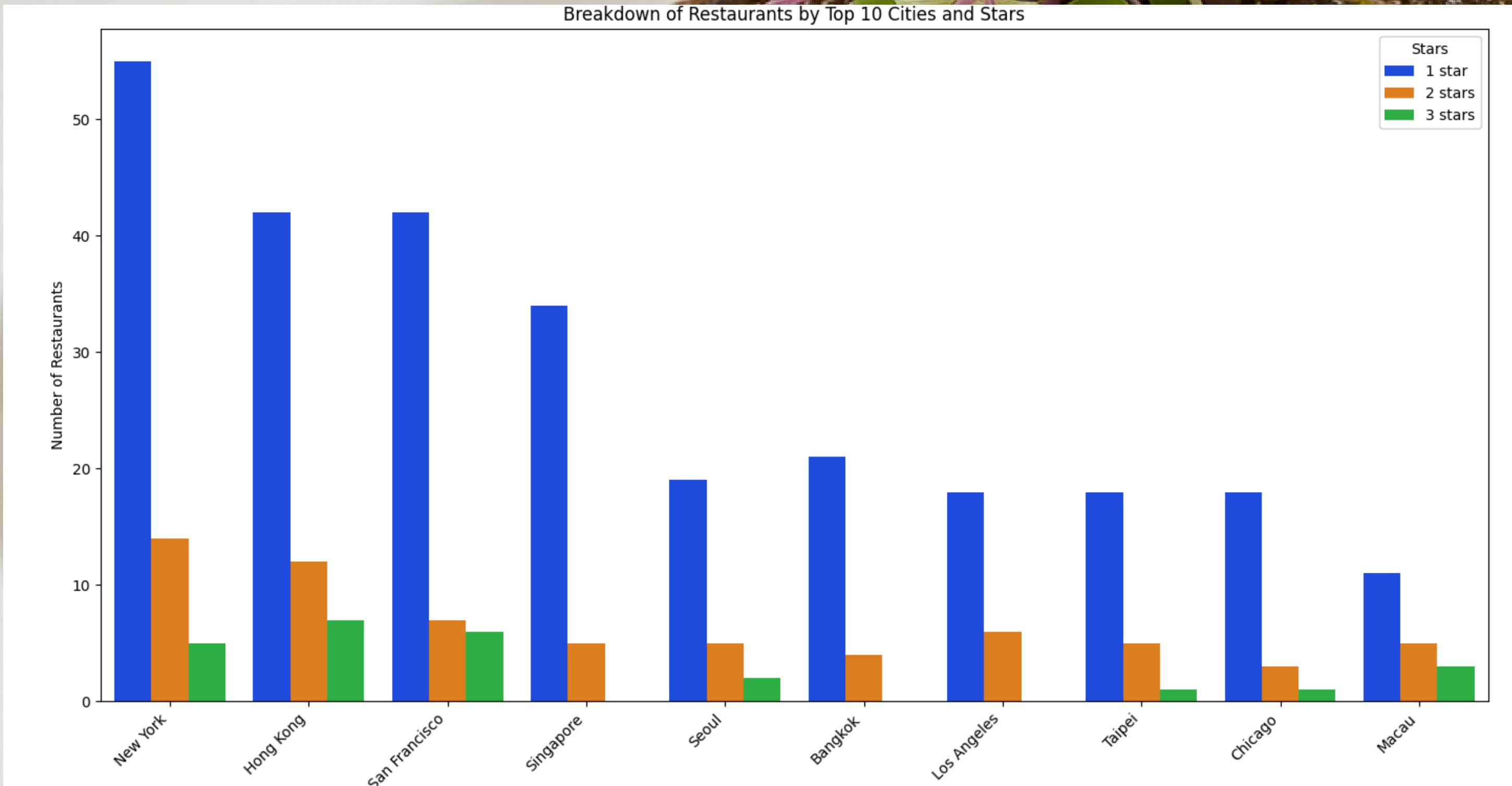
# Where are Michelin-starred restaurants distributed globally?

*New York, Hong Kong, and San Francisco are major culinary and cultural hubs that attract Michelin-star.*



# What is the distribution of 1, 2, and 3-star Michelin restaurants in the top 10 cities globally?

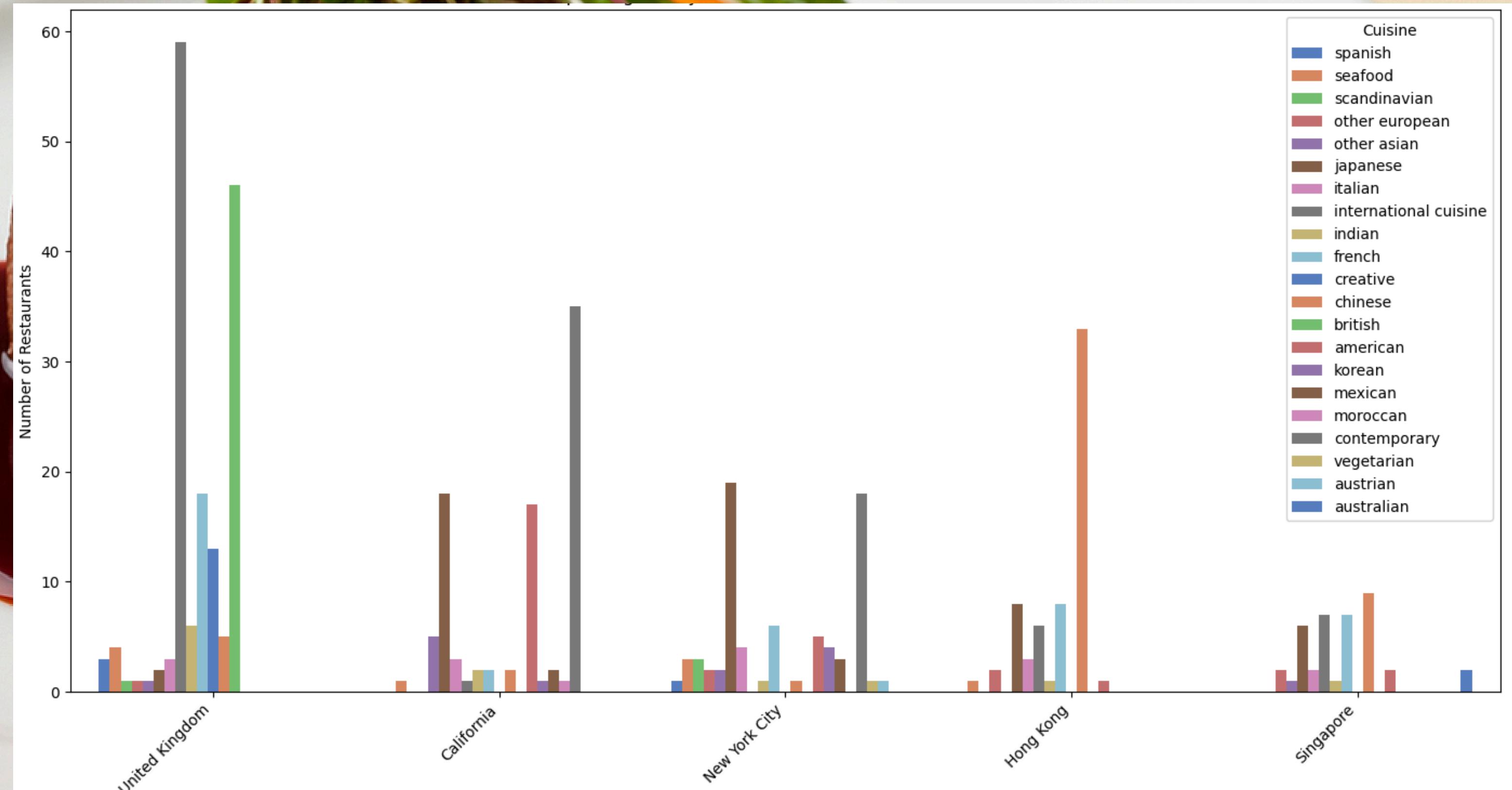
New York leads in 1-star and 2-star Michelin restaurants, offering a diverse array of high-quality dining. Hong Kong, however, excels in 3-star Michelin establishments, indicating a focus on elite dining experiences.



# Exploratory Data Analysis

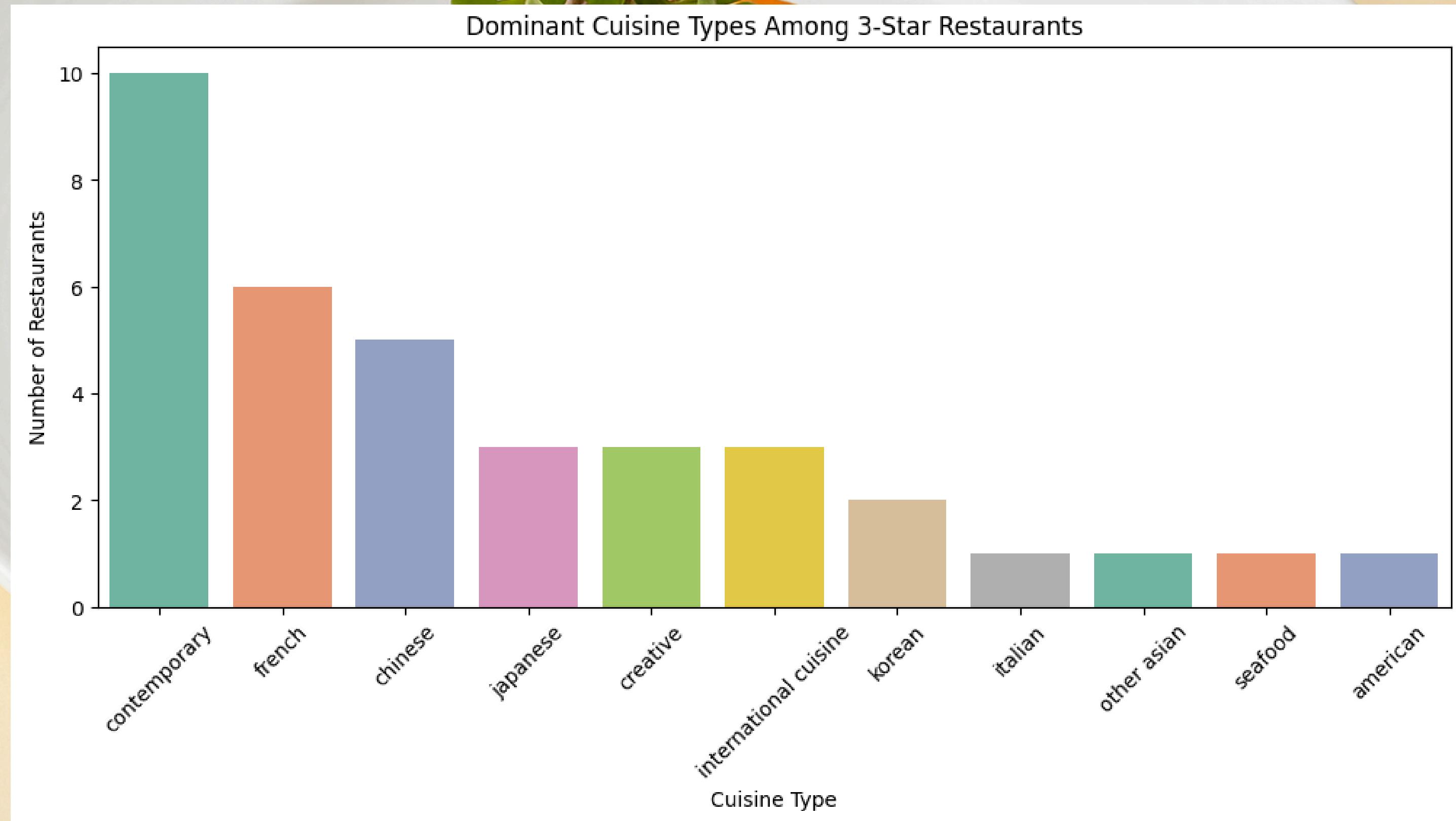
Which cuisine styles are most prevalent among Michelin-starred restaurants in the top 5 regions?

*Contemporary emerges as the most common choice, followed by regional specialties unique to each area.*

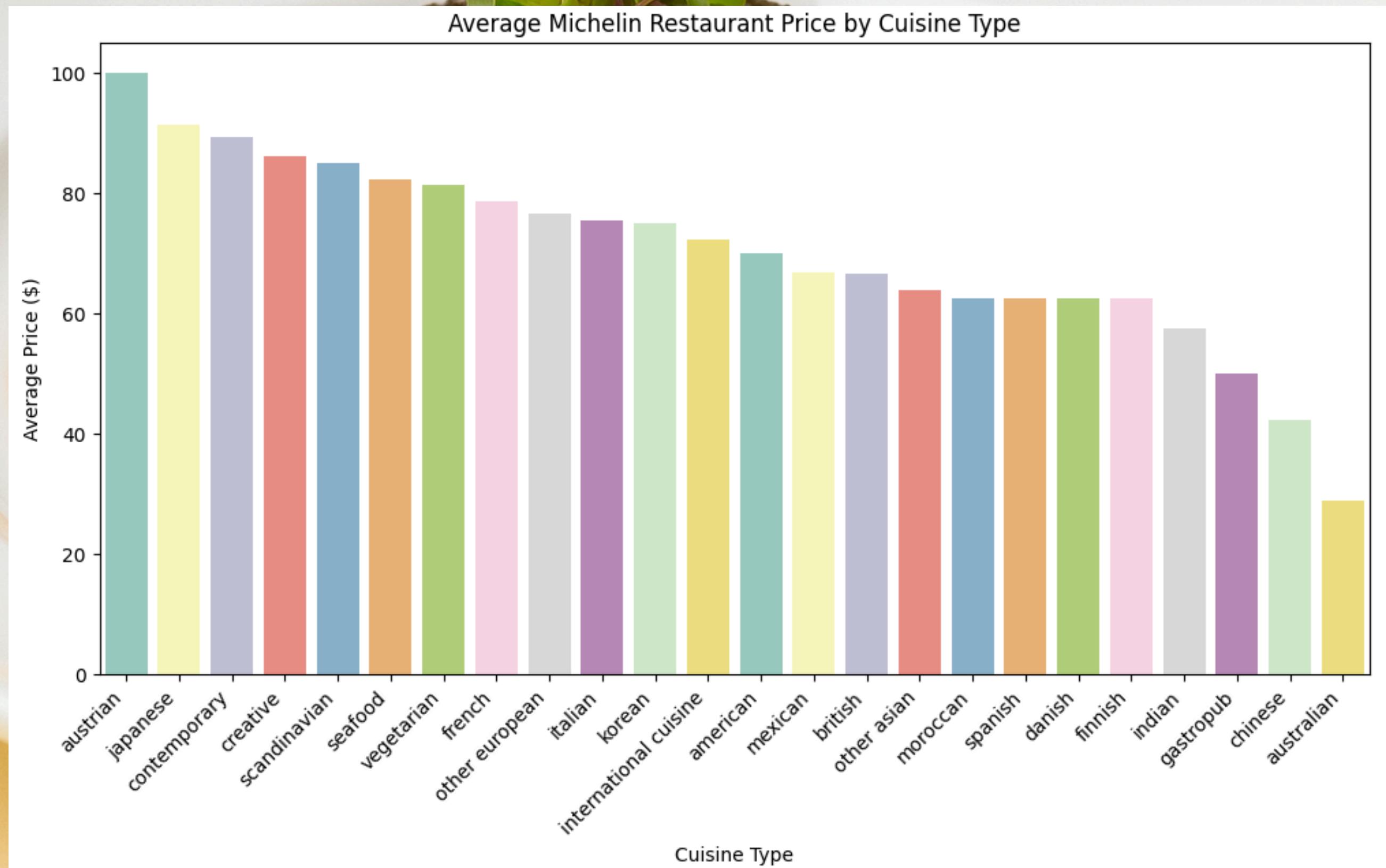


# Exploratory Data Analysis

Among 3-star Michelin restaurants, the dominant cuisines are contemporary, French, and Chinese.



# Exploratory Data Analysis



# Exploratory Data Analysis

maybe a little comment / table screenshot based on customer ratings  
and best 3 restaurants 3 stars in NY?

	name	year	city	region	cuisine	price	url	stars	major_city
	eleven madison park	2019	New York	New York City	contemporary		<a href="https://guide.michelin.com/us/en/new-york-stat...">https://guide.michelin.com/us/en/new-york-stat...</a>	3 stars	New York
	per se	2019	New York	New York City	contemporary		<a href="https://guide.michelin.com/us/en/new-york-stat...">https://guide.michelin.com/us/en/new-york-stat...</a>	3 stars	New York
	chef's table at brooklyn fare	2019	New York	New York City	contemporary		<a href="https://guide.michelin.com/us/en/new-york-stat...">https://guide.michelin.com/us/en/new-york-stat...</a>	3 stars	New York

# Challenges & Solutions

- **Database Compilation:** Faced issues piling up databases and ensuring code order in Notebook. Resolved errors from improper copy-pasting by validating each step.
- **Display Issue:** Incorrect display of restaurant pricing (\$, \$\$, \$\$\$ ) despite correct database entries. Verified row alignment in Jupyter, which was fine, suggesting possible display settings adjustments needed.
- **GitHub Conflicts:** Encountered merge conflicts due to extra bytes after push & pull requests. Implemented new commands like *git stash* and *git restore* to manage and resolve conflicts.

# Webscraping & API



## SEARCH

Even after merging three datasets into a single dataset, we were still missing an important column, the review ratings.



## RESEARCH

We began by trying to scrape Google Reviews, but access was denied (because we didn't know it was only possible through their API with an API key).



## IDEA

It was suggested that we go back to Google Reviews and try using the API instead. This time, we successfully created an API key and were able to collect the data using this



## PROBLEM

I faced same issues when running the code to scrape all of our rows at once.



## GOAL

Therefore, we decided to focus only on specific restaurants and strategic points that were most relevant for a more accurate and meaningful analysis.



## Takeaways

### Pricing Strategy:

- 1-Star: Dominates lower price ranges.
- 2-Star: Thrives in mid-to-high price points.
- 3-Star: Found in the highest price category.

### Top Locations:

- New York: Ideal for 1-star and 2-star goals.
- Hong Kong: Focus for 3-star prestige.
- San Francisco: Another major hub for Michelin stars.

### Culinary Trends:

- Common Choices: Contemporary cuisine is broadly favored and scored 4.5 /5 customer ratings on Google reviews
- 3-Star Dominance: Contemporary, French, and Chinese.

### Cuisine Costs:

- Most Expensive: Austrian
- Followed by: Japanese, Contemporary & Creative, Scandinavian, French, Italian.

### Our strategy:

We aim to enter the market with 1 star price ranges and then scale up after a first market test.

Seoul presents a promising opportunity for further investigation, given low competition in 1 star Michelin. With its strong GDP and a vibrant, youthful population the city is an attractive market for aspiring restaurateurs.

Contemporary cuisine is broadly favored among Michelin-rated restaurants. Therefore, we want to specialize in French contemporary cuisines incorporating modern cooking methods.

# Thank You!



# The Stars on the Plate



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Chiara  
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