

# Analysis of Cost of Living Alongside Violent Crime Rates in Major U.S. Cities in The Past Decade

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## DATA VISUALIZATION PROJECT

Roger Basantes

# **Essential question**

**How does the cost of living correlate with violent crime rates across major U.S. cities from the past decade?**

# Introduction

I created a multi line  
time-series chart that  
analyzes the cost of  
living and violent crime  
rates in five major U.S  
cities.

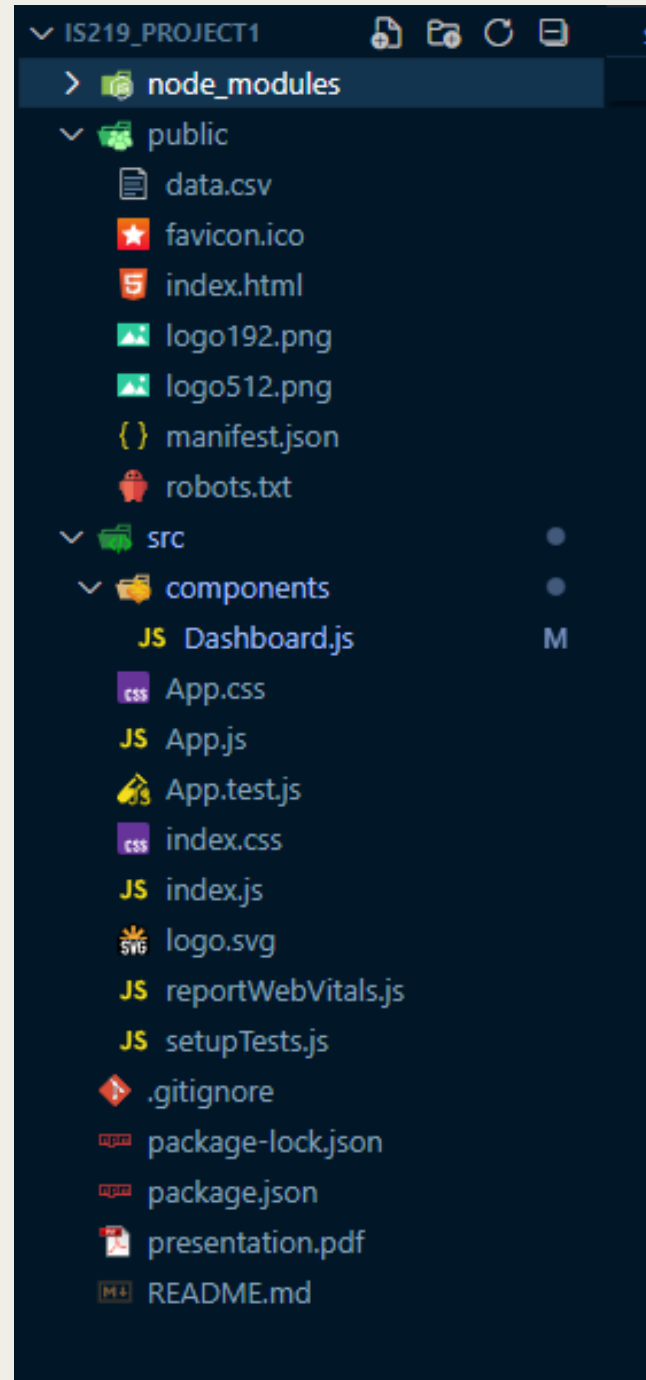
New York, NY  
Houston, TX  
Tampa, FL  
Phoenix, AZ  
San Francisco, CA

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# **Data Sources**

- **Numbeo Cost of Living Index**
- **Bureau of Labor Statistics Consumer Price Index Data**
- **Federal Bureau of Investigation Uniform Crime Reporting  
Program**
- **City-Data Crime Index**

# IDE Setup



# Chart Overview

**Each city has two lines: one for Cost of Living & one for Violent Crime Rate, over the past decade**

**The chart uses two Y-axes:**

**Left Y-Axis: Represents the Cost of Living Index.**

**Right Y-Axis: Represents the Violent Crime Rate (per 100,000 population).**

**Interactive Features:**

**Toggle buttons allow users to select/deselect cities and metrics (Cost of Living and Violent Crime Rate).**

**Tooltips that display information when hovering over data points.**

# Key Takeaways

## Cost of Living Trends

New York City: Consistently the most expensive city(100 index), and known as the reference city in my chart

San Francisco: Shows significant fluctuations, peaking at 103.4 in 2016 and dropping to 92.5 in 2024.

Houston: Generally has a lower cost of living, with a notable drop from 89.9 in 2015 to 69.9 in 2024.

Tampa: Has a moderate cost of living, ranging from 67.1 to 82.

Phoenix: Is stable and has a relatively low cost of living, ranging from 65.9 to 74.

## Violent Crime Rate Trends

New York City: Crime rates have fluctuated but remained relatively stable, with a slight increase from 234.8 in 2014 to 278 in 2024.

Houston: Consistently has high crime rates, peaking at 570.6 in 2020 and slightly decreasing to 566.3 in 2024.

Tampa:Has significant decline in crime rates from 287.5 in 2015 to 203.2 in 2024.

Phoenix: Moderate crime rates, peaking at 419.9 in 2017 and decreasing to 351.5 in 2024.

San Francisco: Sharp increase in crime rates, from 490.9 in 2014 to 495.7 in 2023, but with a slight drop to 357.4 in 2024.

# Comparison

## A. Cost of Living vs. Crime Rates

High Cost of Living, Moderate Crime: New York City has the highest cost of living but relatively moderate crime rates compared to other cities.

Low Cost of Living, High Crime: Houston has a lower cost of living but the highest crime rates among the cities analyzed.

Moderate Cost of Living, Declining Crime: Tampa and Phoenix show moderate costs of living and declining crime rates over the years.

High Cost of Living, Rising Crime: San Francisco has a high cost of living and a significant increase in crime rates, peaking in 2023.

## B. Yearly Trends

2020–2024: Most cities show a stabilization or slight decrease in crime rates, possibly reflecting post-pandemic recovery and policy changes.

2014–2019: Crime rates were more volatile, with some cities showing significant declines and others showing increases.



# Conclusion

**NYC: Despite having the highest cost of living, NYC maintains a moderate and stable crime rate**

**Houston: Has a low cost of living but the highest violent crime rate among the cities analyzed.**

**Tampa: Shows a decreasing crime rate despite a moderate cost of living.**

**Phoenix: Has a moderate cost of living and a moderate crime rate.**

**San Francisco: Has a high cost of living and a rising crime rate, though it remains lower than Houston's.**

**Cost of living is not the sole determinant of crime rates.**

**Other factors like policing, social programs, economic disparity, and historical crime trends likely play a more significant role.**

**Cities with a moderate cost of living tend to have varying crime trends, suggesting that the relationship is complex and influenced by multiple factors**