



Kenichi Maeda

**Final Project Proposal**

# **Decoding Safety**

**An In-Depth Exploration of Crime Trends and Safety insights in Boston**



Generated by ChatGPT

## ABSTRACT

Boston is one of the largest cities in the US and it is also known as an academic city with many renowned universities. People keep coming in, and the city is constantly changing. In such a city, one of the main interests/concerns for both newcomers and long-time residents would be how safe Boston is—because it directly affects the quality of life and becomes the criteria for finding a place for housing. The goal of this data visualization is to analyze Boston’s safety from a data perspective.

Updated Apr 29, 2024

## Description

I moved to Boston a few years ago. I had heard that Boston is a safe city because of its youthful population and its presence as a college town, and indeed, I have not experienced any physical danger so far. However, some of my friends have encountered or been the targets of criminal incidents, and I feel there is a discrepancy between the reality and our perception.

The factor “safety” is even more important for newcomers to Boston. Just knowing where is safe (or where is dangerous) can make the experience of staying in Boston much better.

Therefore, this project will namely examine Boston’s public safety. We often hear that downtown Boston, Roxbury, and Dorchester are dangerous, etc., but how much of this is true? What areas are truly dangerous and at what times of the day? What kind of crimes are happening? Based on the crime incident reports provided by the City of Boston, I will be analyzing when, where, and what kind of crime cases are occurring, and seeking trends and measures.

## Datasets

I first have to start with the data processing of the crime incident reports by the City of Boston. The data is stored separately by year in the database, which needs to be combined. The format of the data is also different in some places, therefore I need to standardize it as well.

Additionally, organizing the data would also be an important process in this project. The report is a collection of a number of cases handled by the police, not all of which directly involve us. For example, some cases include towing a car or assisting children. Since I want this project to focus on crimes that could happen to us, I will exclude those that are not considered “common” crimes based on my own judgment.

### Crime rates data:

- Boston <https://www.neighborhoodscout.com/ma/boston/crime>
- New York <https://www.neighborhoodscout.com/ny/new-york/crime>
- Los Angeles <https://www.neighborhoodscout.com/ca/los-angeles/crime>
- Houston <https://www.neighborhoodscout.com/tx/houston/crime>

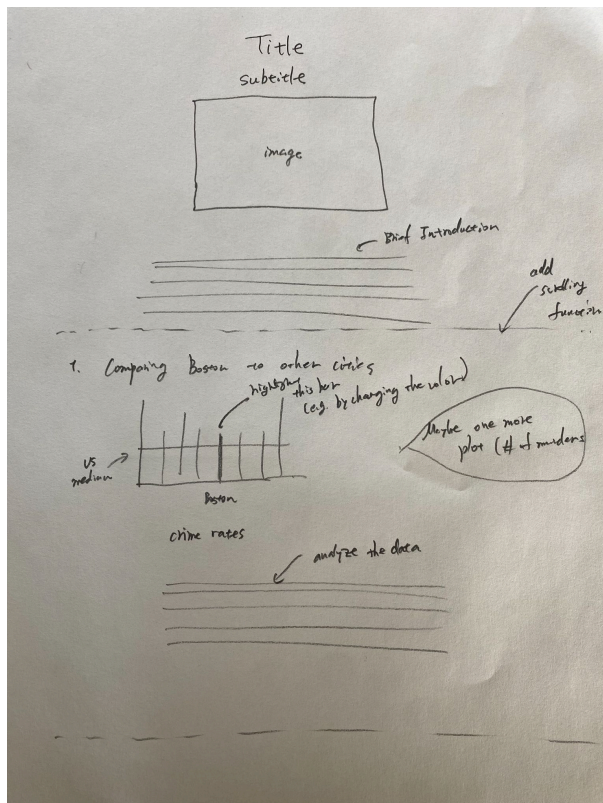
### Crime types, date, and area data:

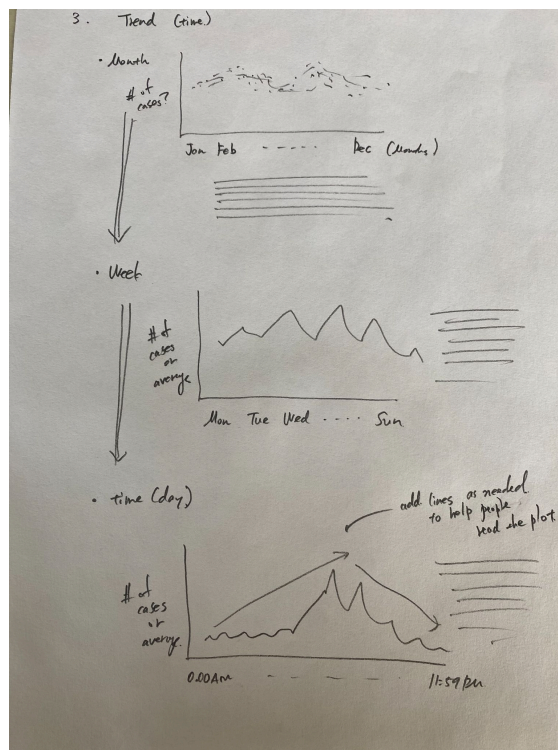
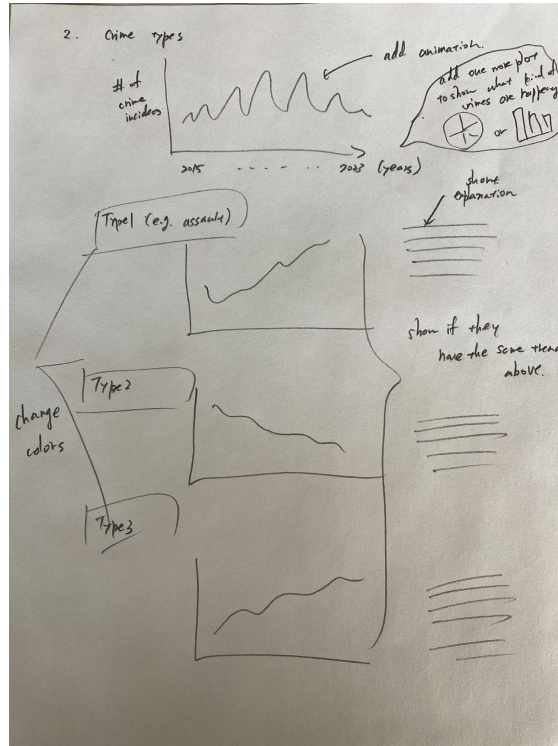
<https://data.boston.gov/dataset/crime-incident-reports-august-2015-to-date-source-new-system>

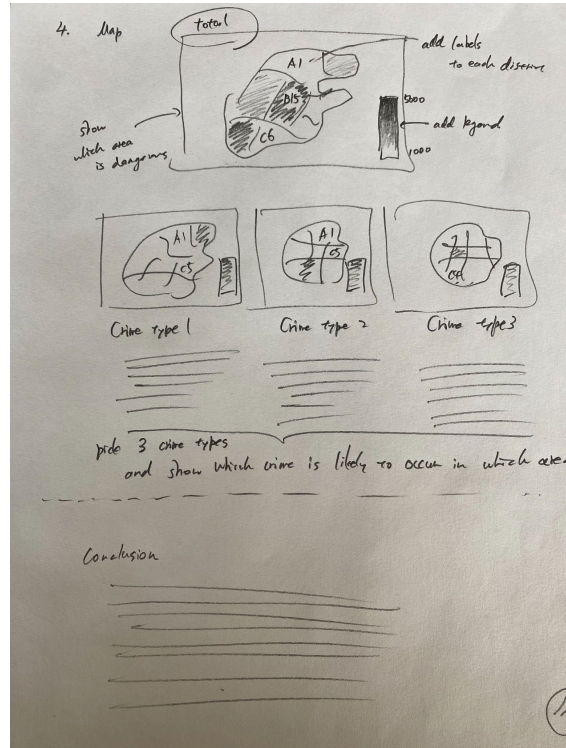
### Economic Indicators:

<https://data.boston.gov/dataset/economic-indicators-legacy-portal>

### Paper Sketches







## Proposed Technologies and Plan

For this project, I would like to analyze public safety from multiple perspectives, therefore I will create many simple plots instead of making one gigantic plot. The main structure is as follows:

### 1. Comparing Boston to other cities

Visualization of how Boston is positioned in terms of public safety compared to other large cities or other Massachusetts cities.

### 2. The number of crimes in Boston

Show how much public safety has changed over the past years or so. Since I would like to show a trend, it would be a line graph, with time (years) on the horizontal axis and the number of crimes on the vertical axis.

### 3. Types of crimes and their changes in Boston

The idea is almost the same as in 2, but I will examine what types of crimes are occurring and whether the number of each crime is increasing or decreasing this time.

### 4. When crime is most likely to occur

Once you know when crime is most likely to occur, it becomes much easier to take action. In this section, I will plot the number of crimes by month, week, and time. I am still considering whether to show all cases or just averages.

### **5. Areas where crime is likely to occur**

It is also important to know the areas where crime is most likely to occur. The crime incident reports have information on which crimes were handled by the police in which jurisdiction. The first step is to map out these jurisdictions (or districts), and then color-code each jurisdiction to show how many crime cases happened in each area.

I will use d3.js and vegalite primarily in this project. Specifically, I will utilize d3.js in cases, for example, where there are complex tasks involved, such as loading geojson files and combining them with other data.

I would also like to add scrolling functions to my website and animations to my graphs so that readers can enjoy just looking at my data visualization. I am also planning to add sound effects as well to make it more fun.

## **References**

<https://gist.github.com/almccon/a53831a573911d0a875821c5f9fac6be>

<https://d3-graph-gallery.com/>

<https://vega.github.io/vega-lite/examples/>

ChatGPT!