**Individual Reflection on DS2500 Group Project: Boston Crime Analysis**

Name: Kaiyang Weng

Project: Boston Crime Analysis

***1. In what ways does this work reflect your best effort? In what ways could you have approached this work more effectively?***

I believe this project reflects my effort in analyzing the geographical analysis of crime in Boston in 2023. I used a lot of advanced Python libraries like ‘Geopandas, Matplotlib, and Seaborn to process, clean, and visualize the data. I’m also identifying the top crime hotspots and mapping the high-risk streets and districts of Boston. Therefore, I think my best effort is to figure out how to visualize the top five crime-heavy streets and discitis and also highlight which streets have the highest shooting incidents.

I think the way for me to approach this work more effectively is to collaborate more with teammates in this project and make sure of the consistency between my findings and their analyses.

***2. What was the most challenging part of this project and how did you overcome it?***

One of the most impressive challenges in this project is to use the GeoPandas method to handle geospatial data. Although this library is powerful, finding a matched and corresponding dataset to integrate with our original crime dataset was difficult. This is because of the formatting inconsistencies and it is hard for me to find a dataset that has the same or similar column values as my original dataset. Also, ensuring the visualized maps accurately was time-intensive.

To overcome these challenges, I went through some research, including online documentation, official websites, and forums. And I also collaborate with my teammates when facing

difficulties. After I tested and downloaded a lot of datasets, I finally found one dataset which is similar to our original dataset. I rearranged and changed the value formats so I'm able to map the crime hotspots effectively and highlight them in red on the Boston map.

***3. For each team member, how did they contribute to the project and work with the group? (You must answer this question for everyone on the team.)***

1. Kaiyang (Kai) Weng

My primary role was conducting the geographical analysis. I used GeoPandas, Matplotlib, and Seaborn to map high-crime streets and districts and identify hotspots for different types of crimes and shooting incidents. Also, I filtered out the numbers and types of the top 5 streets and districts with the most crime, which is helpful for future analysis.

2. Le Fan (Ethan) Fang

Ethan focused on building a predictive model by using the K-Nearest Neighbors (KNN) model, and we finally achieved approximately 75% accuracy. He also did a temporal analysis of our data, like crime throughout the week and day, and he came out with some assumptions to explain the pattern of crime throughout the week and day.

3. Ruyao (Anthony) Tian

Anthony took the lead on data cleaning and exploratory analysis (EDA). He did a Seasonal analysis of the crimes in Boston and filtered which crimes were intentional crimes. For example, the number of crimes changed throughout the year and in different seasons. He also created the final presentation slides, ensuring that the team's work was communicated clearly and effectively.