**Baltimore**

**Parking Violations**



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Springboard Data Science Career Track

Capstone #1 Proposal

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1. **What is the problem you want to solve?**

In this project I will analyze patterns in parking violations issued by the City of Baltimore over the past two years.

1. **Who is your client and why do they care about this problem?**

Two clients will be interested in this study. The first is the local police force. The Baltimore Police department will be interested to learn whether parking violations in their city are more common in particular locations and/or at particular times of day. This will allow the police department to adjust the scheduling and routing of their officers throughout the day to ensure adequate coverage in high-offense areas. Additionally, the outcomes of this project will inform the police department whether there exist any biases in their ticketing patterns, for instance, by car make, age, or out-of-state license plates. The police department will then have the opportunity to retrain their officers to avoid biased ticketing practices.

The second client of this study is the local citizenry. Paying a fine is a matter of civic responsibility and as such the people of Baltimore will be interested to know what percentage of fines are paid on time and whether fines are high enough to deter repeat offenses. In addition, citizens who live or work in areas with high-offense rates could use the results of this study to convince city planners of the need for additional parking structures to alleviate parking frustrations in the area.

1. **What data are you going to use for this?**

The dataset for this project will come from the City of Baltimore’s website: <https://data.baltimorecity.gov/Transportation/Parking-Citations/n4ma-fj3m/data>. As this data is freely available on the web, I will acquire it via simple download. The dataset comprises approximately 1.3 million rows of data (citations) and 20 columns per citation in CSV format. The interesting columns/features of each citation are as follows: date, citation number, license plate number, expiration date, state, make of vehicle, address, violation code, description, fine, penalty, police district, and council district.

1. **In brief, outline your approach to solving this problem.**

My approach will consist of five steps: (1) Data acquisition, (2) Data cleaning, (3) Exploratory Data Analysis, (4) Visualization, and (5) Story compilation. Steps 1 and 2 are self-explanatory. In steps 3 and 4, I will explore relationships between violation code, violation description, fine, location, time-of-day, delinquency in paying fine, state of license plate, and make of vehicle. To accomplish this, I will use regression, correlation, histograms, heat maps, and geographic mapping. Finally, in step 5, I will pull together the results of the study into a comprehensive story.

1. **What are your deliverables?**

My deliverables for this project will be: a summary report, a PowerPoint slide deck, and the code created to perform the analysis.