Sprint 0
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The Problem area

My interest is focused on analyzing parking tickets in the city of Toronto, which falls under the broader field of urban data analysis or transportation data analysis. Here is a list of things I want to investigate based on parking ticket datasets given.

Fairness and Equity:
Analyzing ticket distribution across different neighborhoods is essential to uncover any disparities in enforcement practices.

1. By mapping the distribution of parking tickets across various neighborhoods in Toronto, I can visually identify any disproportionate enforcement in certain areas. This analysis may reveal whether tickets are issued more frequently in lower-income neighborhoods or areas with higher proportions of certain demographic groups.

2. Conducting statistical tests can help find disparities in ticket issuance. For example, I could compare the average number of tickets issued per capita in different neighborhoods and determine if there are statistically significant differences. Additionally, I could analyze the demographics of individuals receiving tickets to identify any biases in enforcement based on factors such as race, ethnicity, or socioeconomic status.

Resource Allocation:
Understanding where and when parking violations occur most frequently is crucial for optimizing resource allocation for enforcement laws and efforts.

1. Analyze any patterns of parking violations to identify peak times and days of the week when violations are most shown. This analysis can help the city schedule enforcement patrols more efficiently, finding when and where they are most needed.

2. Using mapping analysis to identify hotspots of parking violations within the city. I can do this by pinpointing areas with high concentrations of violations, the city can prioritize enforcement efforts in these locations to maximize effectiveness.

3. I can develop predictive models based on historical data to forecast future parking violation hotspots. By leveraging factors such as time of day, day of the week, events, and other relevant variables, these models can help the city proactively allocate resources and plan enforcement strategies.

Users

Residents:
- Residents in different neighborhoods may experience discrepancy in parking enforcement, with some areas facing more frequent ticketing than others. This could lead to feelings of unfair treatment, mostly if enforcement practices appear biased or inequitable.
- By addressing these discrepancies and promoting more equitable enforcement practices, residents across all neighborhoods stand to benefit from a more transparent and fair parking enforcement system.

Communities affected by unequal enforcement:
- Communities that often get hit harder with parking tickets would endure more fines. Hence more financial stress from piling up tickets, making it tougher to afford other things. Plus, increased enforcement could make it trickier for residents in these areas to get to important places like work or the grocery store.

The Big Idea

Machine learning algorithms can analyze historical parking violation data to identify patterns and predict future hotspots of parking violations. By considering factors such as time of day, day of the week, events, and neighborhood characteristics, these models can forecast areas where enforcement efforts are likely to be most effective.

The Impact

Inefficient parking enforcement can contribute to vehicle emissions, leading to environmental impacts such as increased air pollution and greenhouse gas emissions. Through targeted enforcement and optimizing parking availability, my project could help reduce these environmental effects.

Addressing unfairness in how parking rules are enforced can be a big deal for communities. Some neighborhoods might feel like they're always getting hit with parking tickets, which can put a real financial strain on communities and make it harder for them to get to important places like work or the store. By making sure parking rules are enforced fairly for everyone, my project could help reduce disparities.

The Data

This dataset, available on Open Toronto's website, contains information about parking tickets issued in the city of Toronto from 2012 to 2022. It includes details such as the ticket issuance date, location, violation type, and fine amount. With approximately 2.8 million rows of data, this dataset provides a comprehensive record of parking violations in Toronto over a ten-year period.

Reference : [Parking Tickets](#)