### **DATS 6101 Project Proposal**

**By:** Joyce, Hala and Sadheen

* **Research Topic**
  + Crime Pattern Analysis in Washington, DC, US
* **Why did we choose this topic?**
  + We chose this topic because the three of us recently moved to Washington, D.C., and are interested in understanding what influences crime rates in our new neighborhoods. The quality of life affects us daily, and we’re curious about how factors like the local economy, education, and social services impact safety and community well-being. We believe this is important not only for us but for everyone living here, and we hope to uncover meaningful insights. Our research questions are shaped by the data available to us, and we plan to secure additional data to explore these topics further.
* **Project 1 Summary**
  + In Project 1, we examined crime patterns in Washington, D.C., during 2024, analyzing variations across neighborhoods, seasonal fluctuations, and the most frequently reported offenses. We also investigated the correlation between crime type and time of day, as well as identifying neighborhoods with the highest homicide rates. The findings reveal that crime is unevenly distributed, with certain areas experiencing significantly higher rates. Theft was the most commonly reported crime, while homicide and assault were more prevalent during the midnight shift. The data showed that September had the highest number of incidents, whereas March recorded the lowest. Statistical analysis confirmed a significant correlation between crime type and time of day, emphasizing the need for time-sensitive law enforcement strategies.
* **SMART Questions**

1. **To what extent does living below the poverty line correlate with felony counts in Washington, D.C., during 2024?**
2. **How does the type of felony offense vary by police shift in Washington, D.C., in 2024?**
3. **Which neighborhood characteristics are most predictive of felony counts in Washington, D.C.?**
4. **Does the method of crime influence the likelihood of felony offenses occurring in different neighborhoods?**
5. **What is the relationship between Business Improvement Districts and felony counts?**

* **Source of data** 
  + **Source:** Open Data DC which is managed by the Enterprise Data team in the Office of the Chief Technology Officer (OCTO).
  + **Number of observations:** 29292
  + **Link:** [Crime Incidents in 2024](https://opendata.dc.gov/datasets/DCGIS::crime-incidents-in-2024/explore?location=38.904184%2C-76.985427%2C10.98)
* **Github Link:** [DATS6101-G2](https://github.com/haabualtayeb-0/DATS6101-G2)