



How Crime Has Changed in St. Louis, MO

A study of how crime changed from 2021 to 2023

Team 8: Data Science Squad
December 2024



Meet Team 8: Data Science Squad



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**Check out
our cool
shades!**



Project Overview



Curious about correlation of weather & crime

- Selected St. Louis, MO
- Among top 10 cities in US with highest crime rates
- Too much to analyze weather & crime



Narrowed scope to crime in St. Louis

- Last 3 years (2021-2023)
- Further reduced to Top 5 crimes



Analyzed trends & patterns across 3 key dimensions

- Time of day
- Month-to-month
- Seasonality



Discovered

- Data can tell a different story
- Use data to affect change



Our Goals



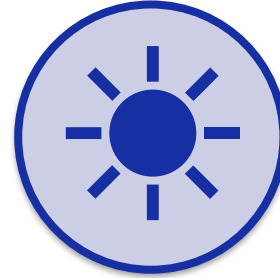
Understand Temporal Patterns

- Identify how crime activity fluctuates during **different times of the day**



Detect Month-to-Month Trends

- Determine how crime rates **shift across months** in the year



Assess Seasonal Effects

- Examine how crime rates are influenced by **seasonal changes** over the three-year period

Data Collection & Exploration



St. Louis Metropolitan Police Department crime data

- CSV was downloaded from [St. Louis Crime Files](#)
- We focused on data fields reflecting crimes by:
 - Types
 - Times of Day
 - Monthly Rates
 - Seasonal Rates
 - Yearly Data Values
- CSV file had 18,138 total records covering 2021-2023



Data Clean-up



Data Clean-up Overview

- Determined Visual Studio data dependencies to review the Top 5 Crime types:
 - **Property Damage : 1st Degree**
 - **Property Damage : 1st Degree (Motor Vehicle)**
 - **Stealing : Motor Vehicle**
 - **Stealing**
 - **Leaving Scene of Accident (Motor Vehicle)**
- Dropped irrelevant columns and crime types
- Converted columns to proper date/time format
- Dropped null/missing values from data



Research Approach

We used a Descriptive Analysis method

Summarized raw data to provide insights:

- Averages
- Counts
- Trends
- Answer “what happened” questions

Assumptions

- Most crimes occur at night
- Seasonality may have an impact on crime
- Assaults & homicides are likely among the top 5 crime types



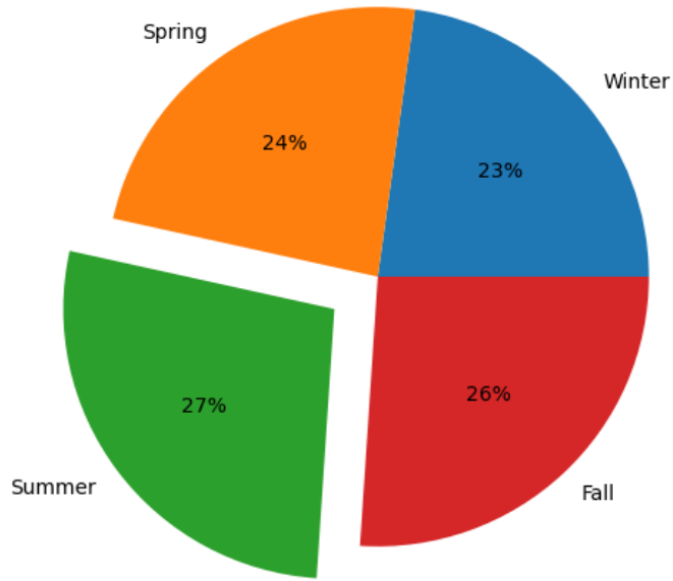
Research Questions

1. Have crime rates increased or decreased between 2021 and 2023?
2. **What is the highest type of crime from 2021 – 2023?**
3. **Do crime patterns vary across the seasons?**
4. How have trends for different crime types evolved?
5. Which times of year show the highest & lowest crime rates?
6. **What time of day experiences the least crime?**

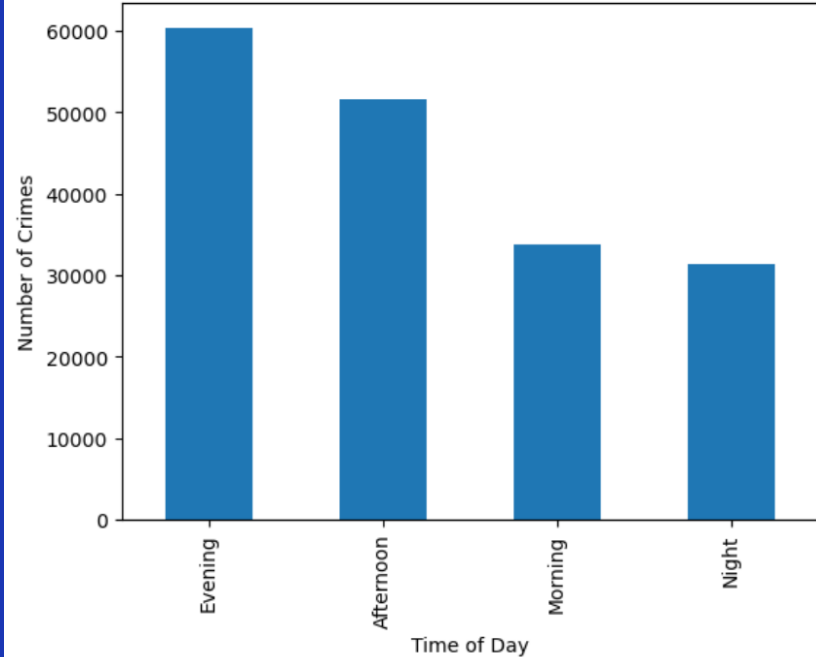


Analysis (Part 1)

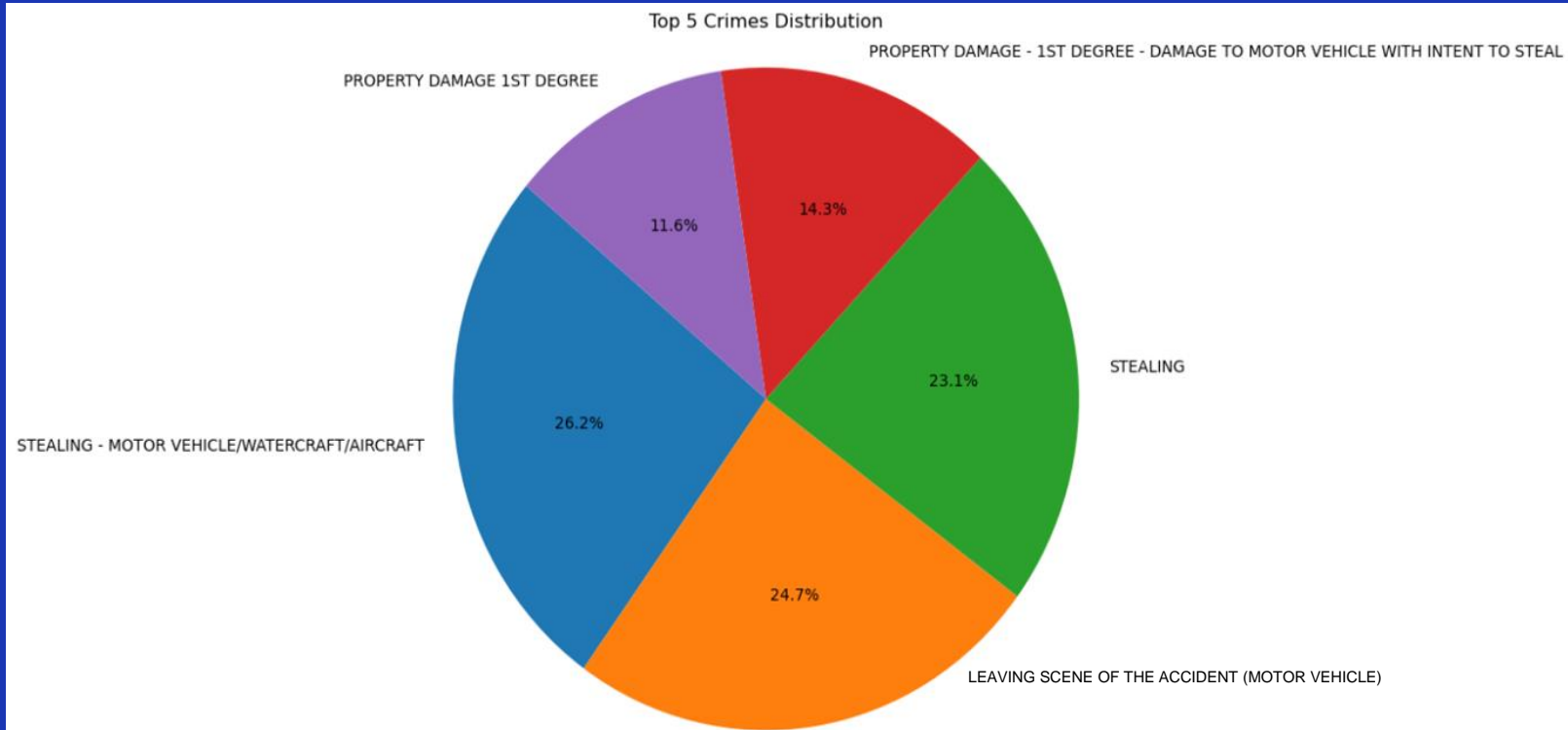
Number of Crimes by Season



Total Crimes by Time of Day



Analysis (Part 2)



Conclusions & Next Steps



- **Most crimes** were committed in summer
- Evenings had the most instances (5 – 9 pm) compared to Night (9 pm – 6 am)



- **Stealing motor vehicles** (Auto/Air/Water) was most common crime
- Homicide & assault were not in the top 5 crimes over the 3 years
- Property damage occurred less than other crimes



Important to look at crime because you can help:

- Improve public safety
- Drive better allocation of resources
- Support data-driven policy making



Next Steps

- Overlay weather data
- July 2021 & 2022 had the most crime
- January had most crime in 2023
- Recommend more police patrol during evening hours



DEMO!

**AFTERWARD YOU CAN
ASK QUESTIONS**

WIN A PAIR OF VIRTUAL SHADES





Appendix



Research Files

Cities in US with highest crime rates

<https://getsafeandsound.com/blog/most-dangerous-city-in-america/#:~:text=1.,Memphis&text=Memphis%20has%20one%20of%20the,policing%20and%20community%20engagement%20initiatives>

US News & World Report Real Estate Crime Rankings

<https://realestate.usnews.com/places/rankings/most-dangerous-places>

St. Louis, MO Metropolitan Police Department Data File

<https://slmpd.org/stats/slmpd-downloadable-crime-files/?dpage=1>

