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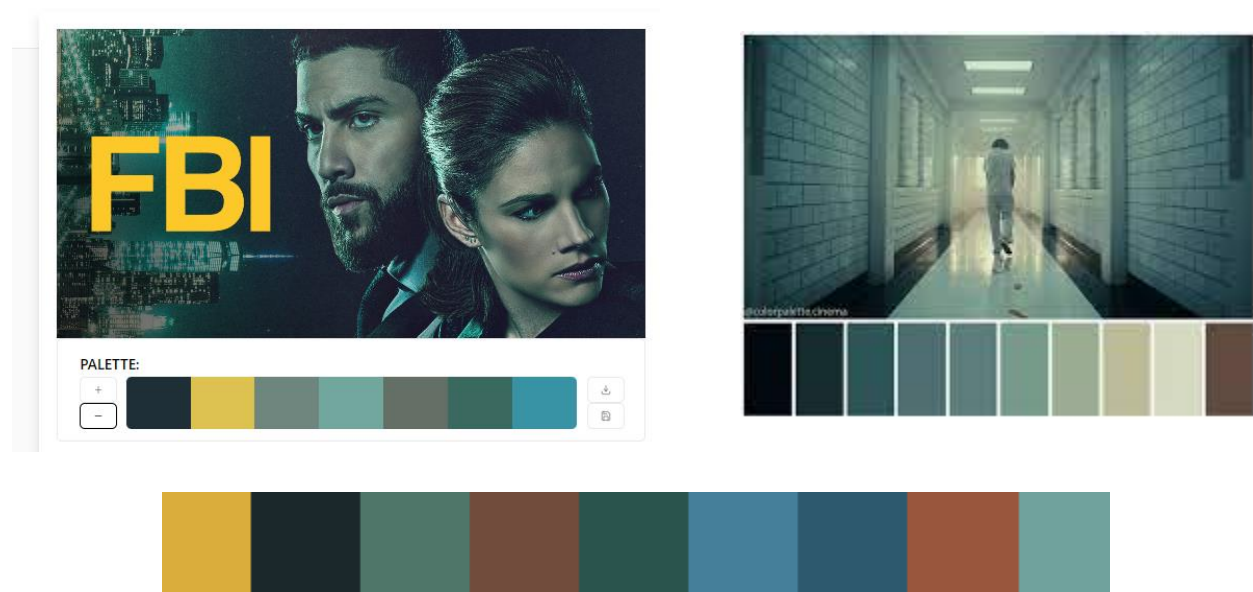**Dallas Crime
Project 3, Group 3
October 2021**

Introduction:

From the first day of a presidential campaign from any party there is the promise to end "American carnage". In fact, it's not just in America but really in any country, any individual that is running to hold a high political position, promises to eradicate crime; to have the people of the area live with peace, law, and order. Except that confronted with reality, it's not an easy task to truly "eradicate "completely. There is no record of anyone whether a continent, country, politician, a civil group or any single individual that has been successful at eradicating crime. Whether it'd be property crime or violent crimes, sadly, they keep on existing in society. Of course, the reasons for crimes vary, some commit impulsive crimes based on feelings or certain situations they are put in. Others take their time and plan try to plan the perfect crime, maybe because they enjoy the thrill or feel like they must commit the crime to live better. Regardless of the reason crime still exists. If it exists, it can be observed, studied, analyzed, and researched: all of this being done well. What is the point well analyzed data if the data is never showcased or showcased inadequately? This what group three aimed to do at least at a local scale. Group 3 aimed to observe, analyze, and properly display stylistic data on crime happening in Dallas in the year of 2020 to answer questions such as: What gender, age range, committed more crimes? What months showed a spike in theft, and murders? Where are police shootings concentrated in?

Inspiration:

The crime genre whether it'd be through shows, movies, podcasts, books has always been not only entertaining but also extremely popular. Not just the crime genre but its sub fictional genres like thrillers, mysteries; or its non-fictional genres like true crime, and documentaries. Not only are they entertaining and popular but they sometimes can be informative when it's based in real life,

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hence our project to see what lurking beyond in Dallas. Another form of inspiration one of the most popular holidays in the US: Halloween. With it being around the corner the idea of people taking on a different persona and committing "bad deeds" came to mind. We wanted to observe if there is a relationship with crimes committed during this time of the year and track other trends in criminal activity outside of this Halloween season.

Our color scheme originally took in inspiration from certain shows and scenes with a more angelus color scheme mixed with a couple of neutrals that were low in saturation and in value.

However, as the project progressed the color scheme changed to something more a bit neutral and monochromatic scheme was used.

With an occasional splash of color coming from secondary color schemes graphs and visualizations created. all seemed to blend well. Fortunately, it all seemed to blend in well.

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Data Sources:

Our primary data source for this project came from City of Dallas Open Data. It provided us with information needed; it included but was not limited to; the crime type and its sub-genre, the location of where the crime was committed, the time it was committed, the persons age etc.

https://www.dallasopendata.com/

The data source then provided us with the following datasets: Police Incidents, Dallas Police Officer-Involved Shootings, and the Police Arrests Dataset.

Data Cleaning:

After identifying the datasets, python was used with Panda's library to import the data and filter out the categories needed for our visualizations. Pandas performed aggregate functions to pair count totals with those categories. No additional work was needed for the 'Dallas Police Officer-Involved Shootings' dataset since geolocation coordinates were provided in the json file.

Visualization Analysis:

Sunburst Graph (D3) – 2020 Police Arrests Observing Demographic Trends/Patterns

It was reported that out of the 94,678 arrests that were made 76,638 were male and 17,948 were female and 92 of them were unknown. Of the arrests made, the age group 20-29 is arrested the most their total number being 32,988 with the least arrested group of 90-99 which only had 5 arrests. When it came to race, the breakdown was: Black 41,244, Hispanic or Latino following with

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28,962 arrests with Native Hawaiian/Pacific Islander 102 and Unknown 44 being the lowest. Lastly, when it came to ethnicity, most of the arrests were made with those Non-Hispanic or Latino 82,184 and the least under Unknown 267.

Lollipop (D3) – 2020 Police Incidents Observing Burglary and Theft

For burglaries in 2020, the most reported months happened in January at 37, August at 35, and April at 32. The least active months are February at 17 and March at 19 reported burglaries. No real correlation was identified for the sudden downward trend following those peak months. After switching the view to 'Theft', reported incidents remained constant over the year having around 20 theft cases except for March at 33 and May/June at 31.

Plotly – 2020 Police Incidents Observing Homicides

2020 homicides never exceeded 15 in each month; however, five months stood out when '> 10' filter was used to examine the data: June, July, October, November, and December. It is a shocking observation to notice peak homicide activity at the end of the year, but further investigation would be needed to determine root cause for this behavior.

Leaflet – Dallas Police Officer-Involved Shootings

The marker clusters help provide insight on police officer-involved shooting hotspots in Dallas. Areas of concern would be in central and south Dallas having a higher frequency compared to the other regions. Additional information is provided when selecting the markers: Subject, Address, Date, Outcome, and Officer involved.

Conclusion:

We accepted our alternative hypothesis and determined that Crime in Dallas experiences the most crime out that Black Males are the most arrested in our dataset. We also discovered that the lowest crime in the City of Dallas Native Hawaiian/Pacific Islander (which does not have a large population in the city) had the lowest percentage of crime incidents out of every month in 2020.

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After investigating what type of crime occurs the most, we failed to reject our null hypothesis and determined that the most common crimes that occur throughout Dallas are burglaries and they occurred the most during the months of January, April & August. Likewise, Homicides are also one of the highest crimes, but they occurred the most during completely different months: October, November & December.

Recommendations:

Based on our analysis, we recommend that the Dallas police force have more officers on duty in the months of August through January and allow officers vacation time in February & March.

Limitations:

Police arrests and police incidents datasets only covered what happened in 2020 and did not allow additional analysis for what could have been a year-over-year comparison to better identify possible trends and patterns in criminal activity. Due to time constraints, other categories were not covered in arrests and incidents reported and could have provided a more, thorough analysis on all the other crimes committed.

Future Work:

Given more time and resources, exploring criminal activities in other major Texas cities to compare to Dallas would have made it easier to perform any kind of analysis and reach a possible conclusion based on those findings. Expanding the 2020 datasets to include previous years would enable a better tracking of movement and tendencies on the reported crimes and demographic.