

Crime and COVID-19 in Houston: How do they relate?

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4/21/2022

Research Question

Is there a relationship between COVID-19 positivity rates and crime offense rates in Houston, Texas?

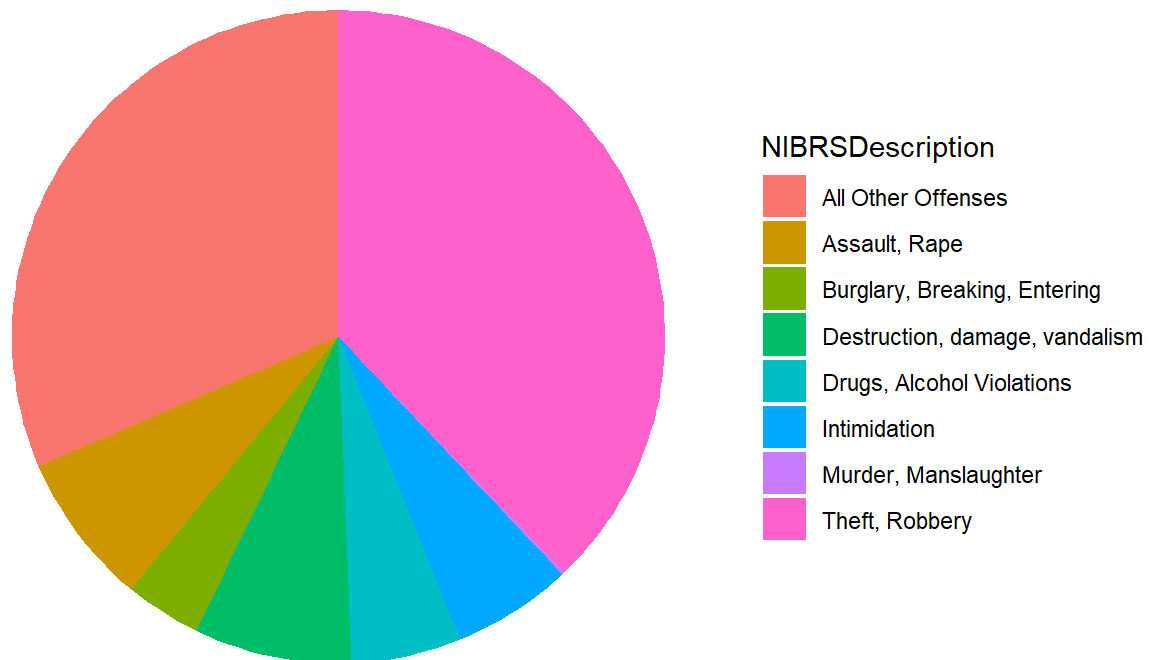
Datasets

- Crime by street/neighborhood in Houston from 2017 to 2021
 - Incident, OccurrenceDate, OccurenceHour, NIBRSCClass, NIBRSDescription, OffenseCount, Beat, Premise, StreetNo, BlockRange, StreetName, StreetType, Suffix, City, ZIPCode
- Daily COVID-19 positivity rate in Harris County from 2020 to 2022
 - ï..OBJECTID, id, Date, Positive_Pct, Postive_Pct_14dayAvg, Threshold_5PCT, Status, Red_Status, Orange_Status, Yellow_Status, Green_Status, Total, Negative, Positive, Date_Str, Positive_Pct_Str, Postive_Pct_14dayAvg_Str, Threshold_5PCT_Str, Date_Updated, today
- News headlines mentioning COVID-19

Initial Visualizations

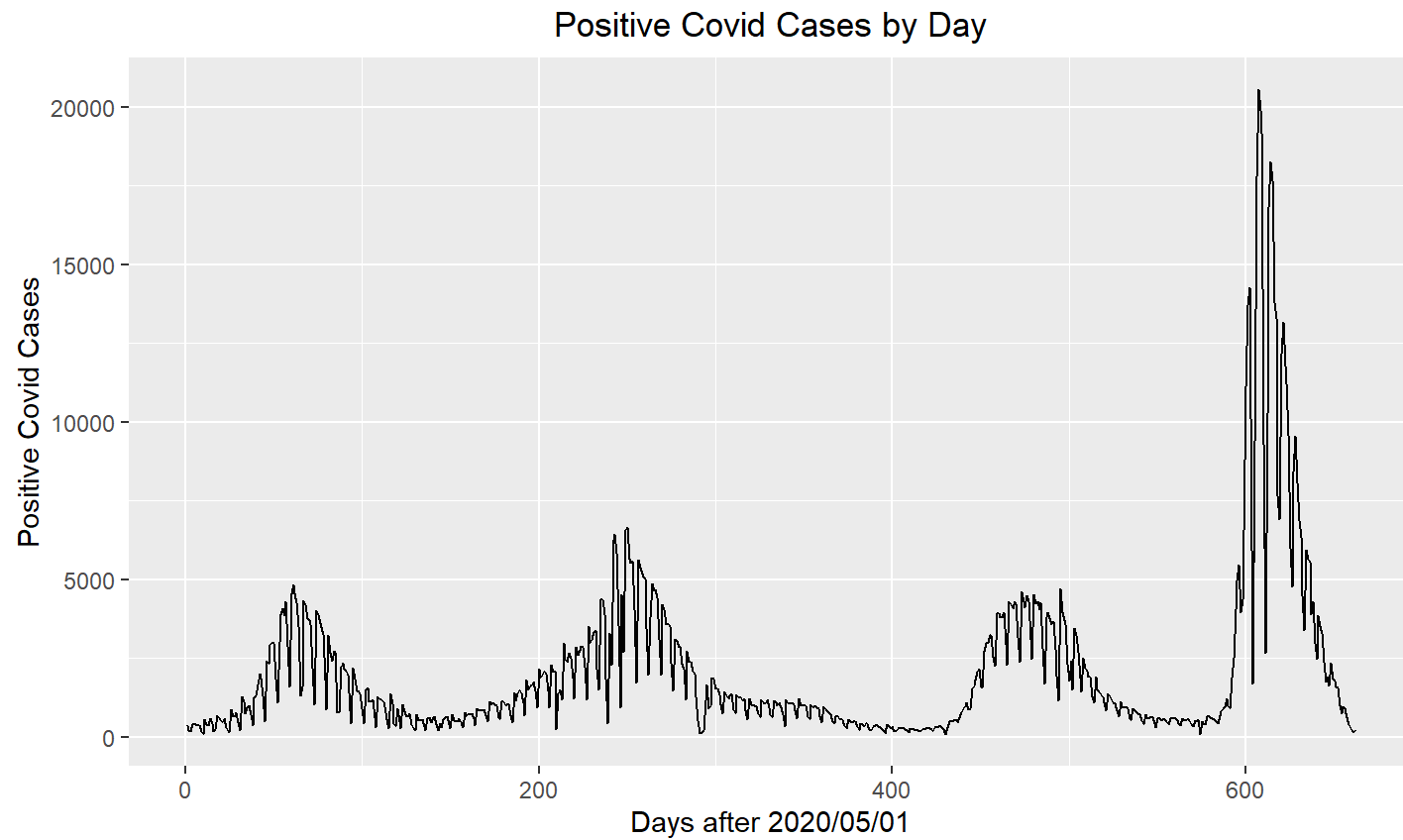
- Plot 1

Number of Offenses by Type of Crime



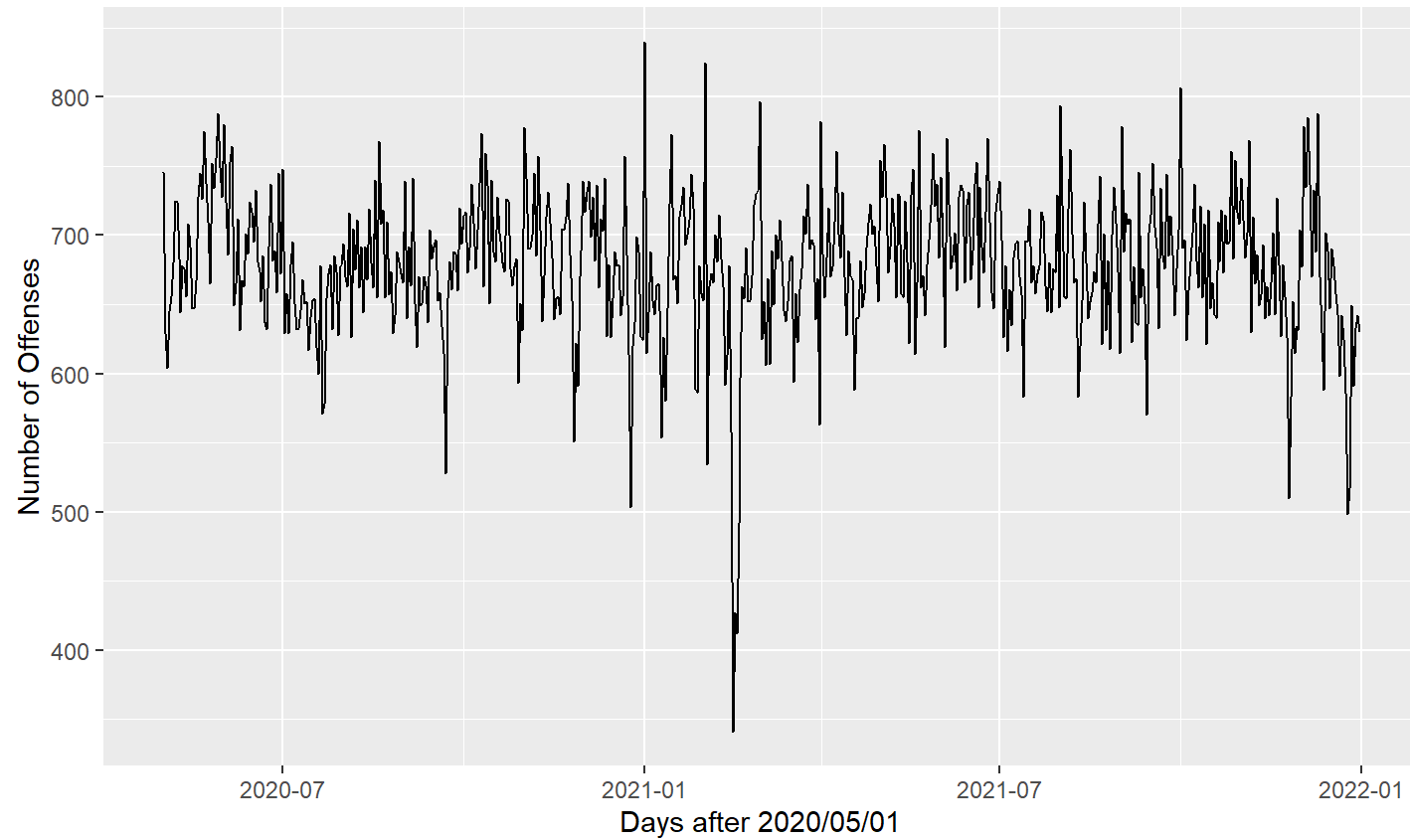
Initial Visualizations

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Plot 2

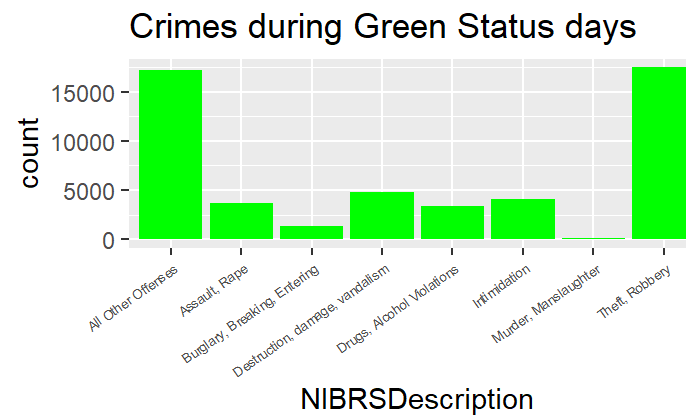
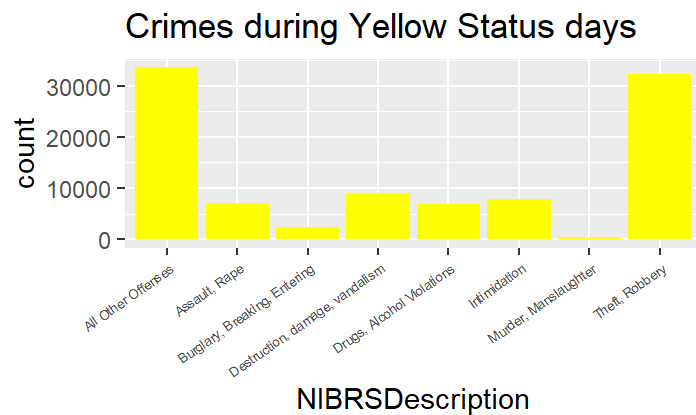
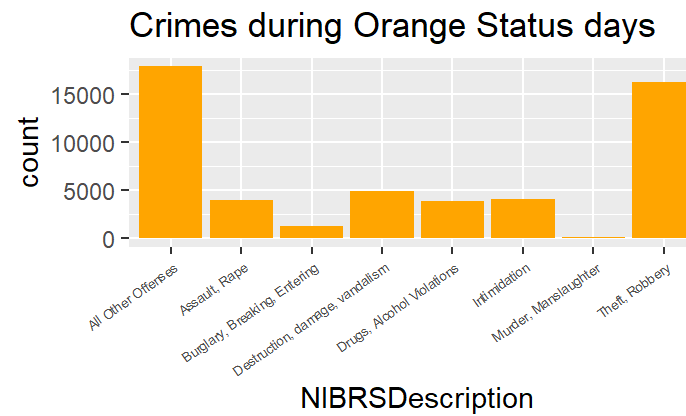
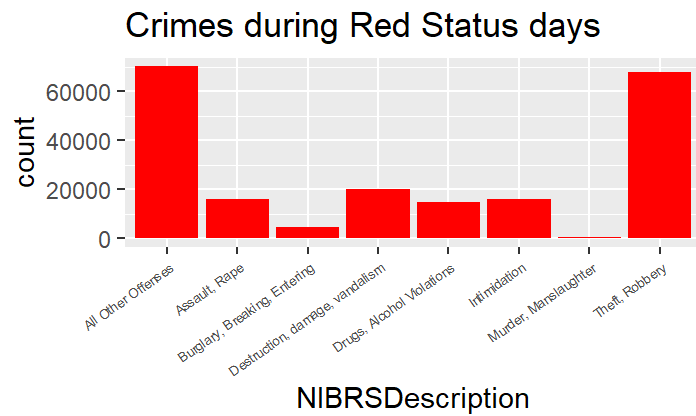
Initial Visualizations



Question 1

- Is there a correlation between COVID cases and crime cases?
- Initial hypothesis is that there are more crimes on days with worse COVID alert levels

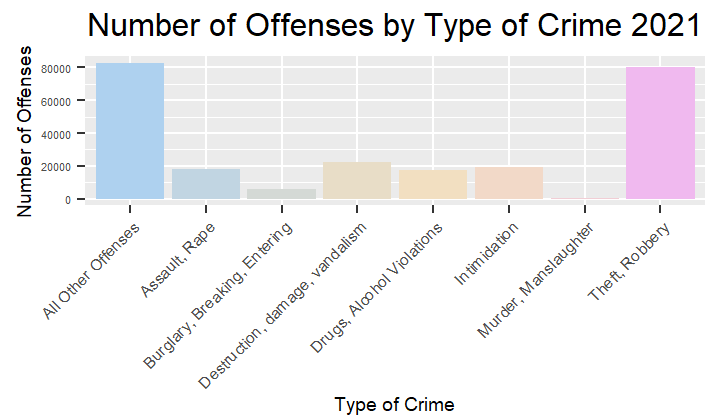
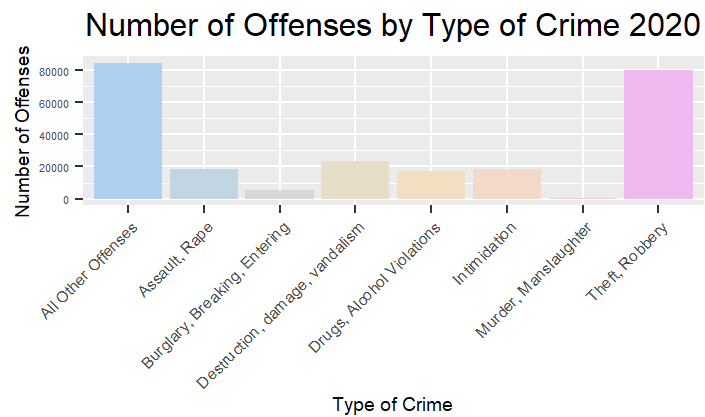
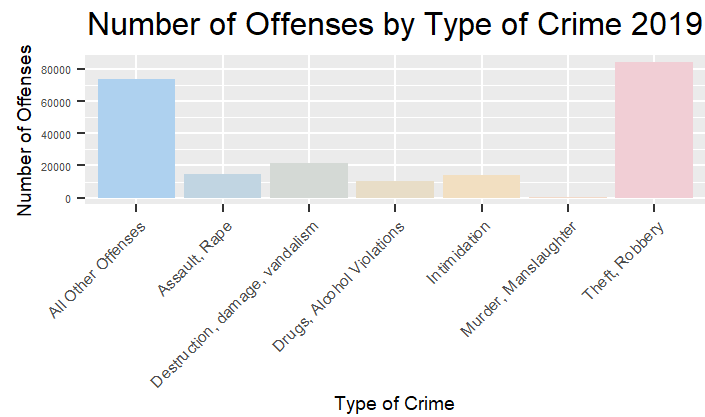
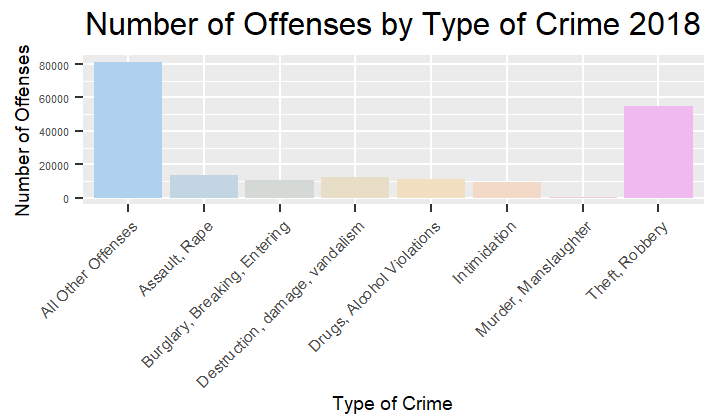
Question 1



Question 2

- Why are there more occurrences of certain types of crimes compared to others?
- Our initial hypothesis was that theft & robbery increased a lot due to COVID-19
- 2019->2020, theft & robbery decreased
- 2020-2021, theft & robbery remained constant
- Contrary to our initial hypothesis

Question 2

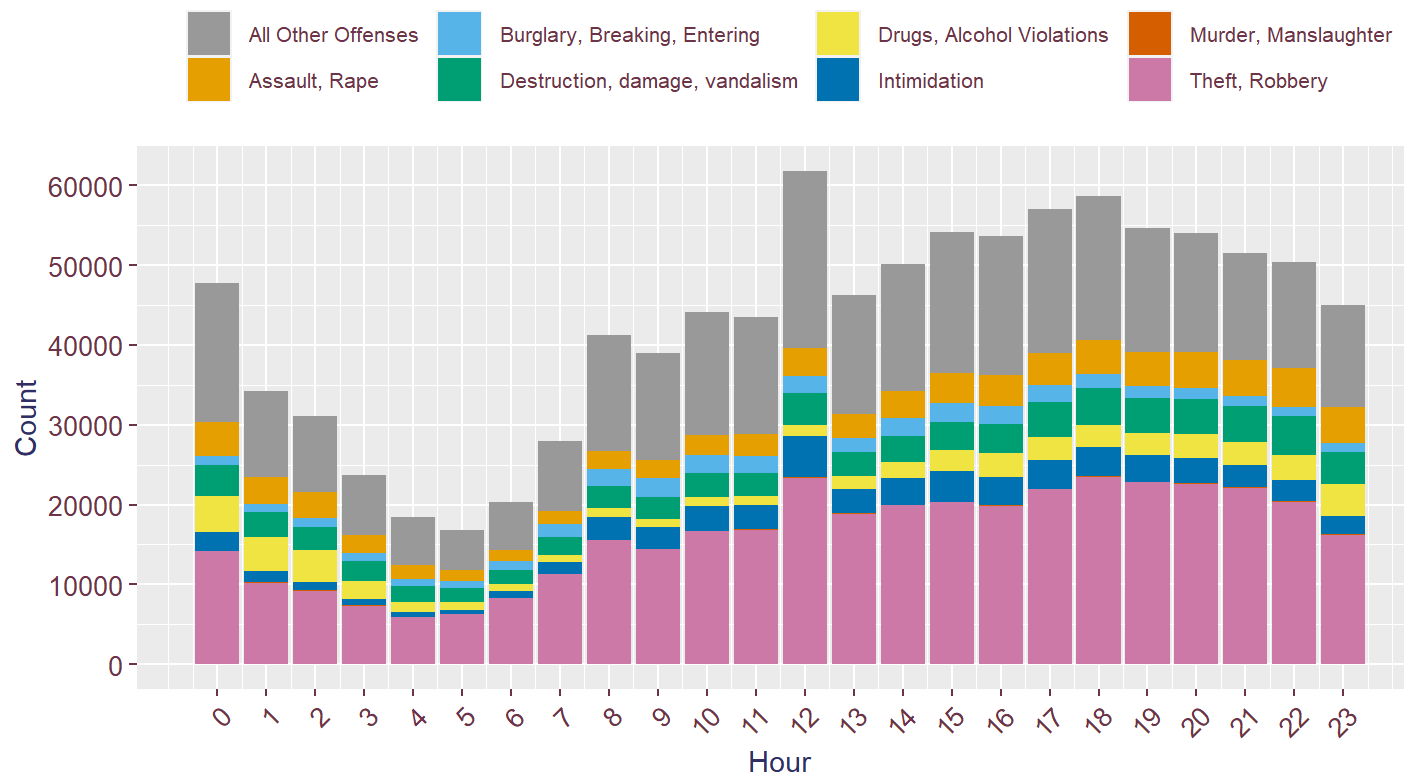


Question 3

- Does crime in Houston, Texas change by time of day in response to COVID-19?
- The initial hypothesis was that COVID-19 did change the trend of Houston crime data over time

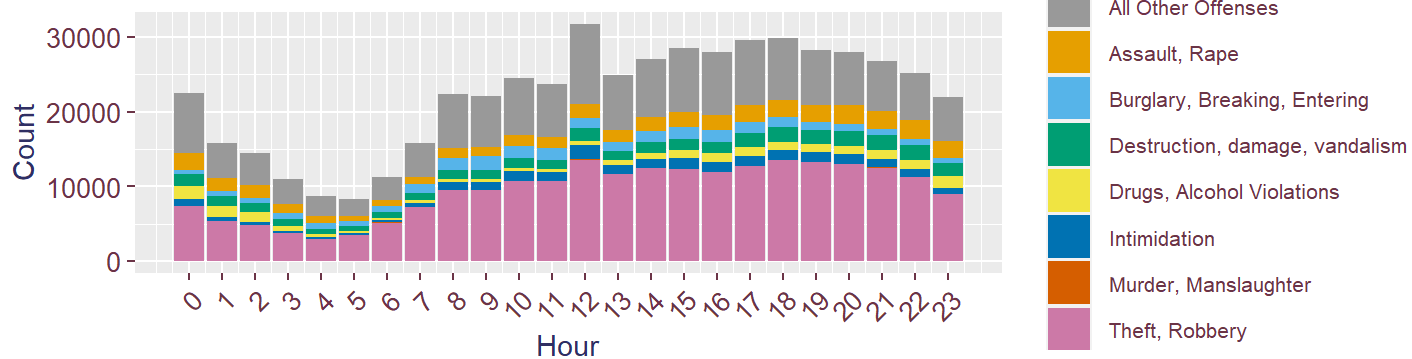
Question 3

Houston Crime by Time of Day(2017-2021)

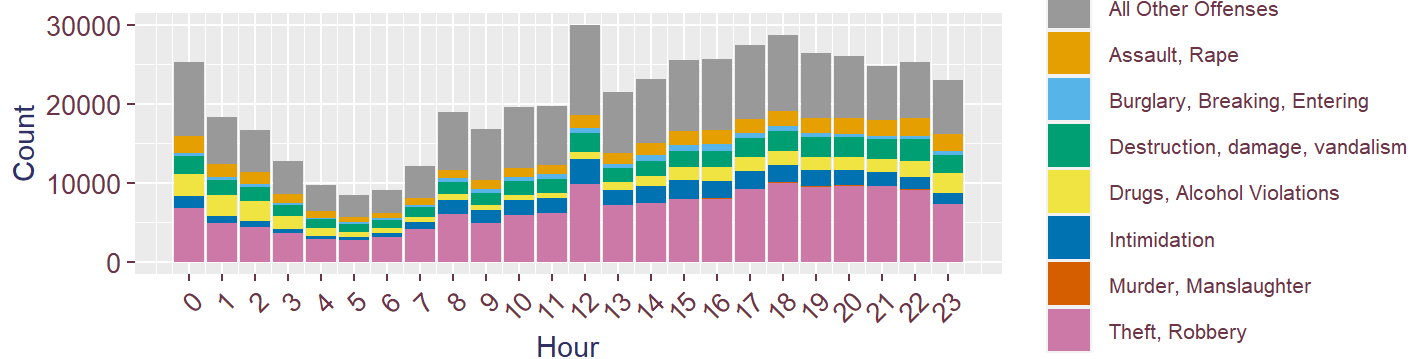


Question 3

Houston Crime by Time of Day(2017-2019)



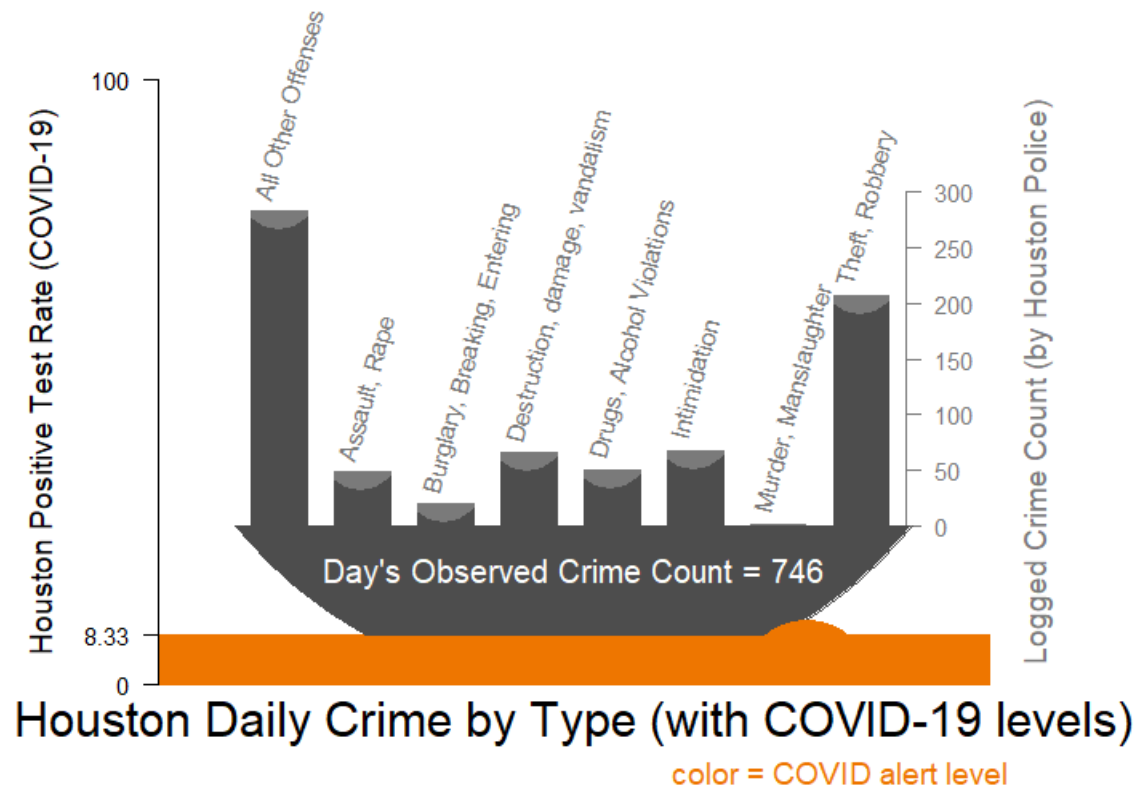
Houston Crime by Time of Day(2020-2021)



Killer Plot

Date:

2020-05-01



Conclusion

- Crimes across all offense types appear more frequent with worsening COVID alert levels
- Even though COVID cases continued to increase over the years, the most common crime cases remained stable
- COVID-19 changed the time of occurrence in some violations, but the general trend remained the same
- Building customizable, flexible plots in grid can help us convey complex data trends in original, interesting ways