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# AUSTIN CRIME REPORTS ANALYSIS

Sayesha Aravapalli | Rawini Dias | Ming-Hsiu (Matthew) Peng | Prathik Ullur

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# Agenda

- ①  Objective
- ②  Approach
- ③  E  
D  
A
- ④  Insights  
and  
Solution



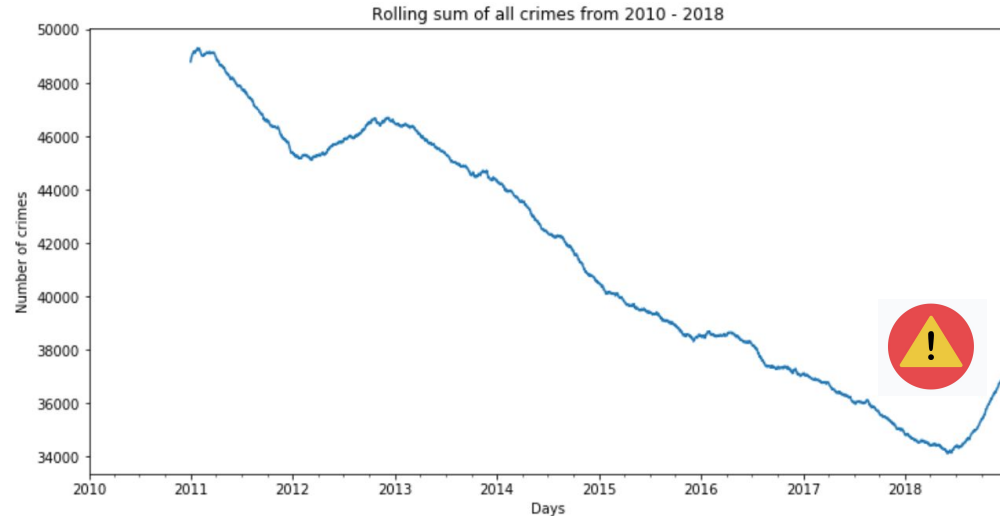
# Objective

## ! Problem

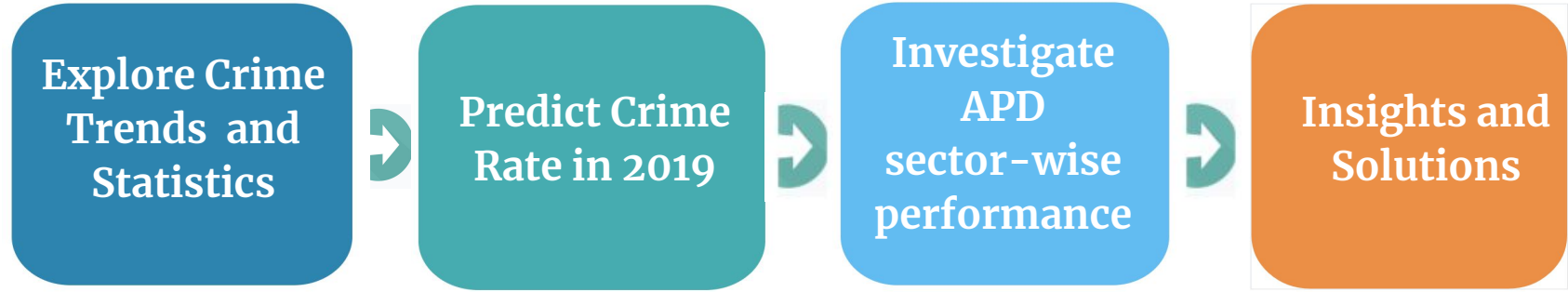
- Drastic increase in crime rate in 2018

## ? Questions

- What's causing this trend?
- How will crime trend in 2019?
- Which APD Sectors are performing poorly?
- When and where to allocate resources?

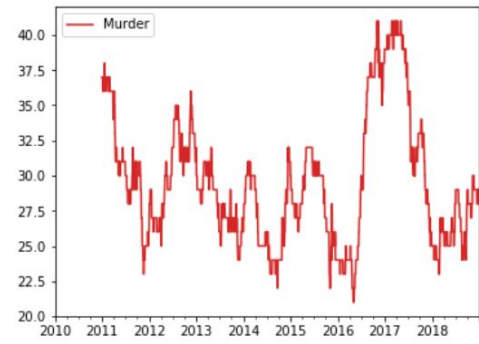
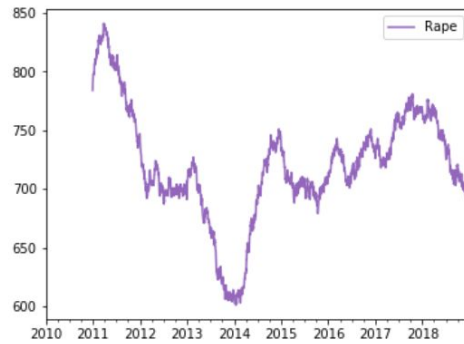
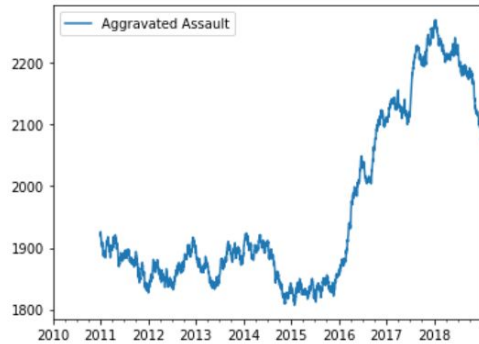
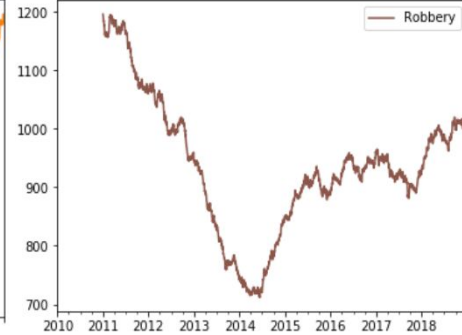
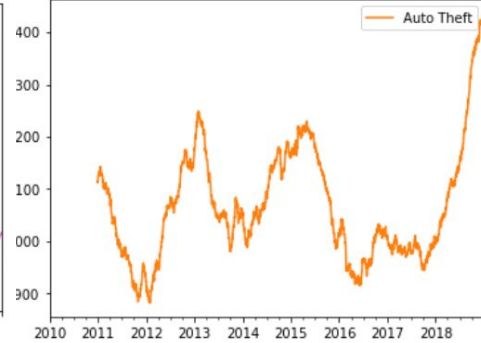
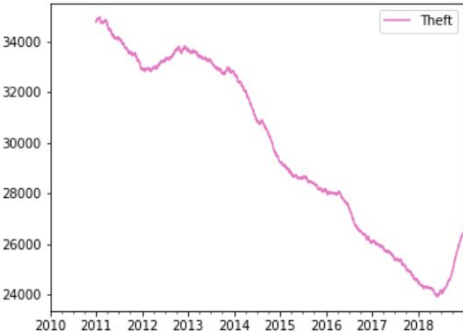


# Approach



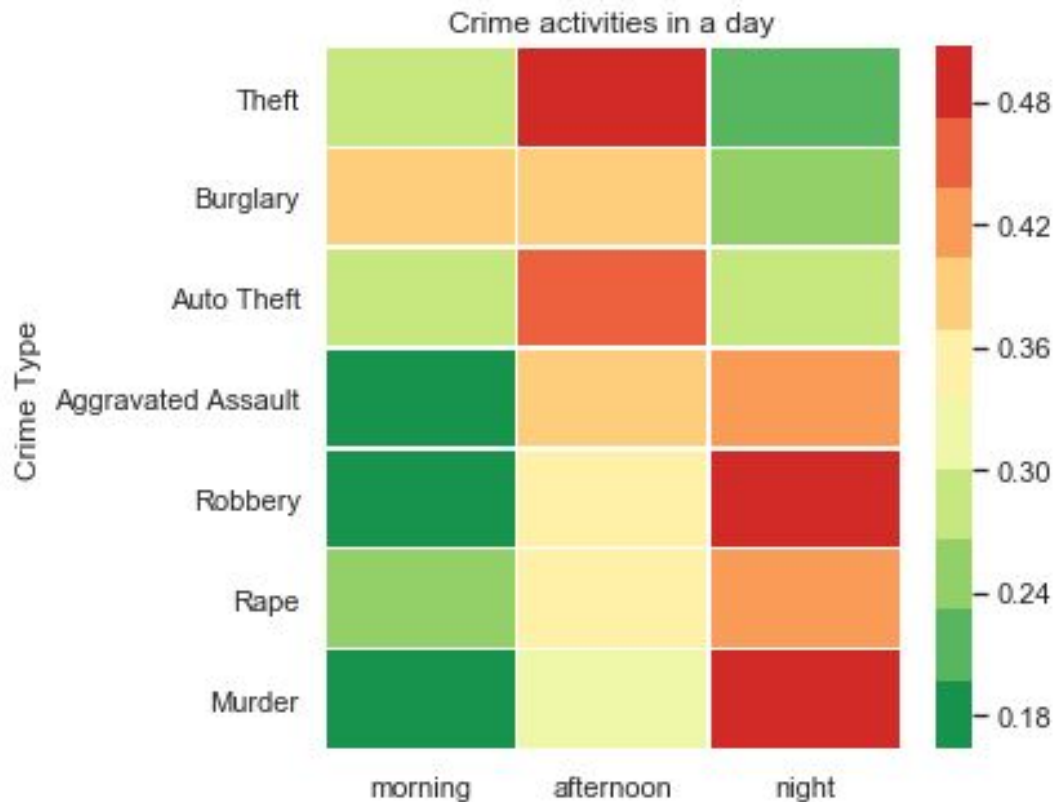
# Overall Trends of Crime

# Time Series of Crime Rate by Offense Type



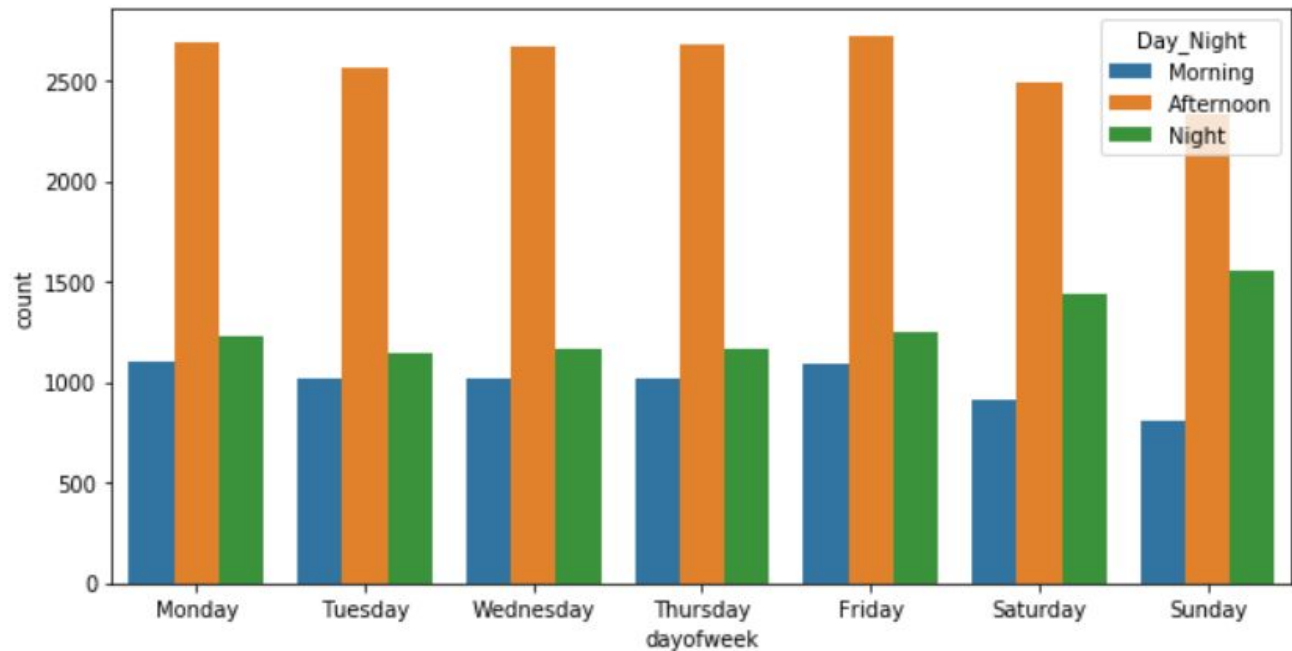
# Crime Patterns by Time

# Rate of Crime on an average day (2018)





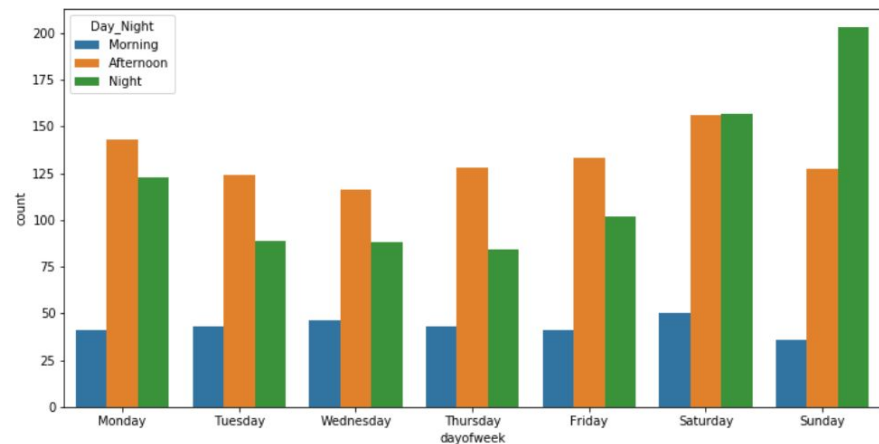
# Non Violent Crimes Pattern by Day of Week (2018)



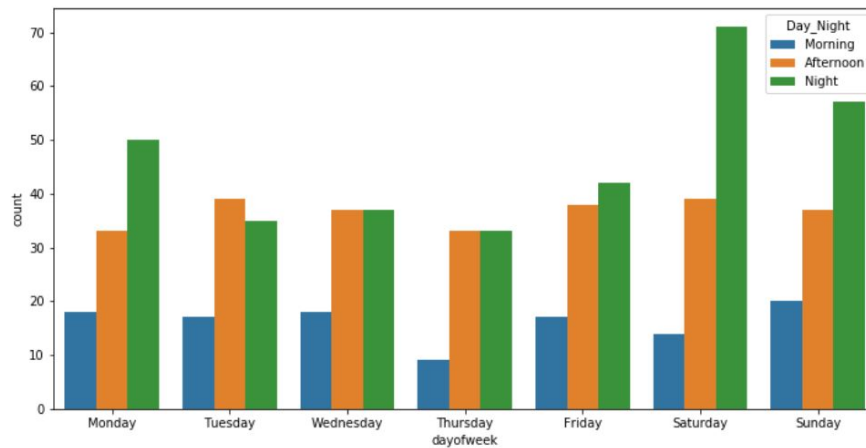
## Non-Violent Crimes

Burglary, Robbery, Theft, Auto Theft

# Violent Crimes Pattern by Day of Week (2018)

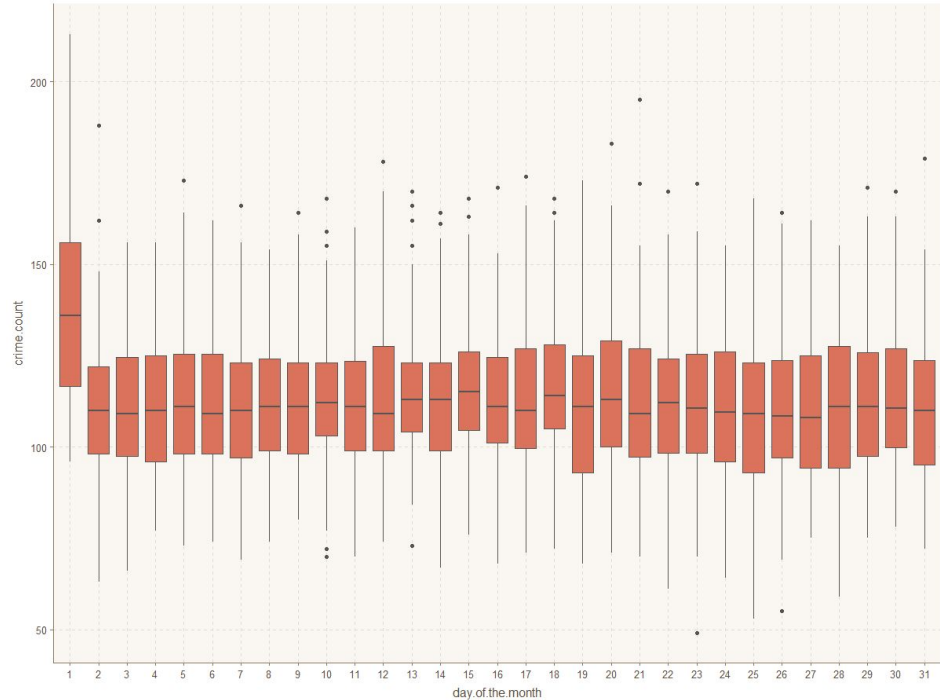
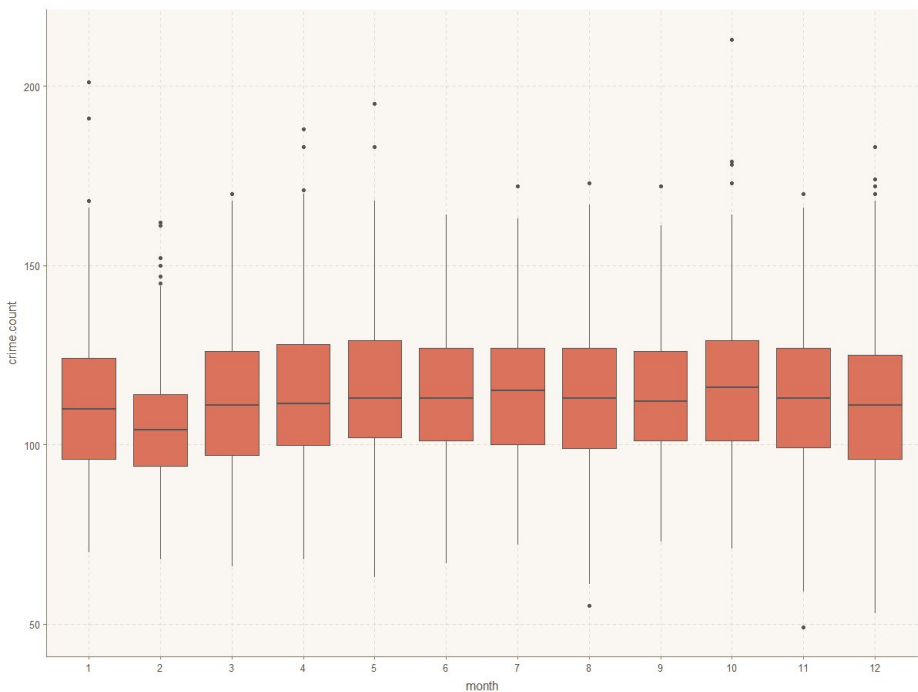


Aggravated Assault

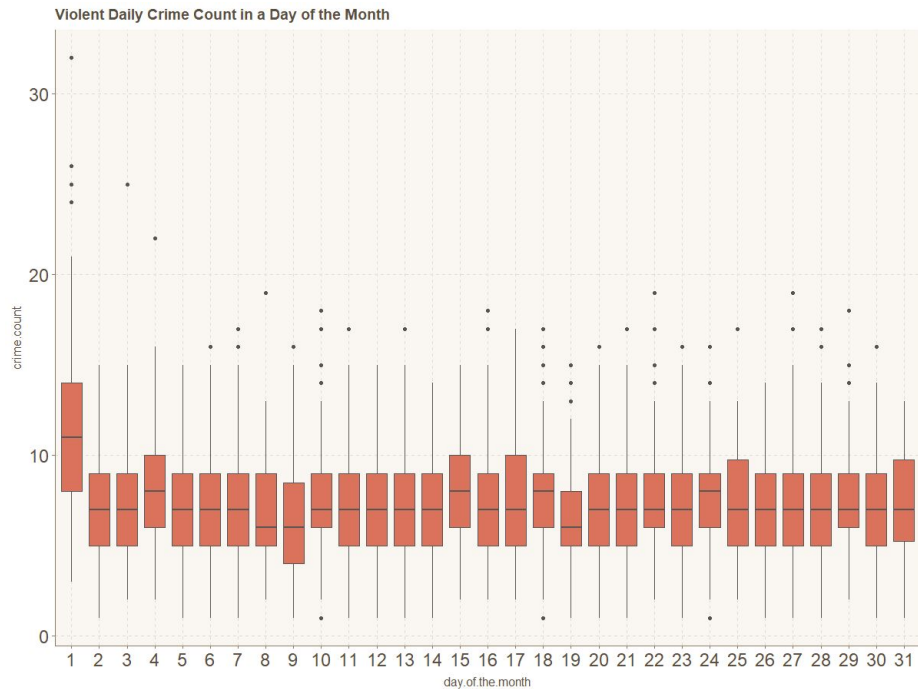
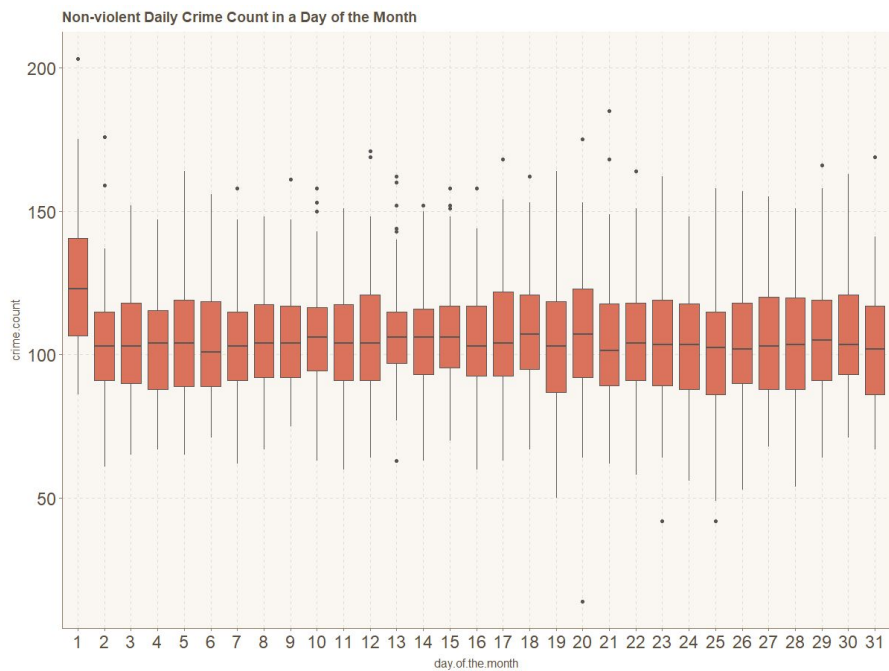


Rape

# Crime Distribution by Month

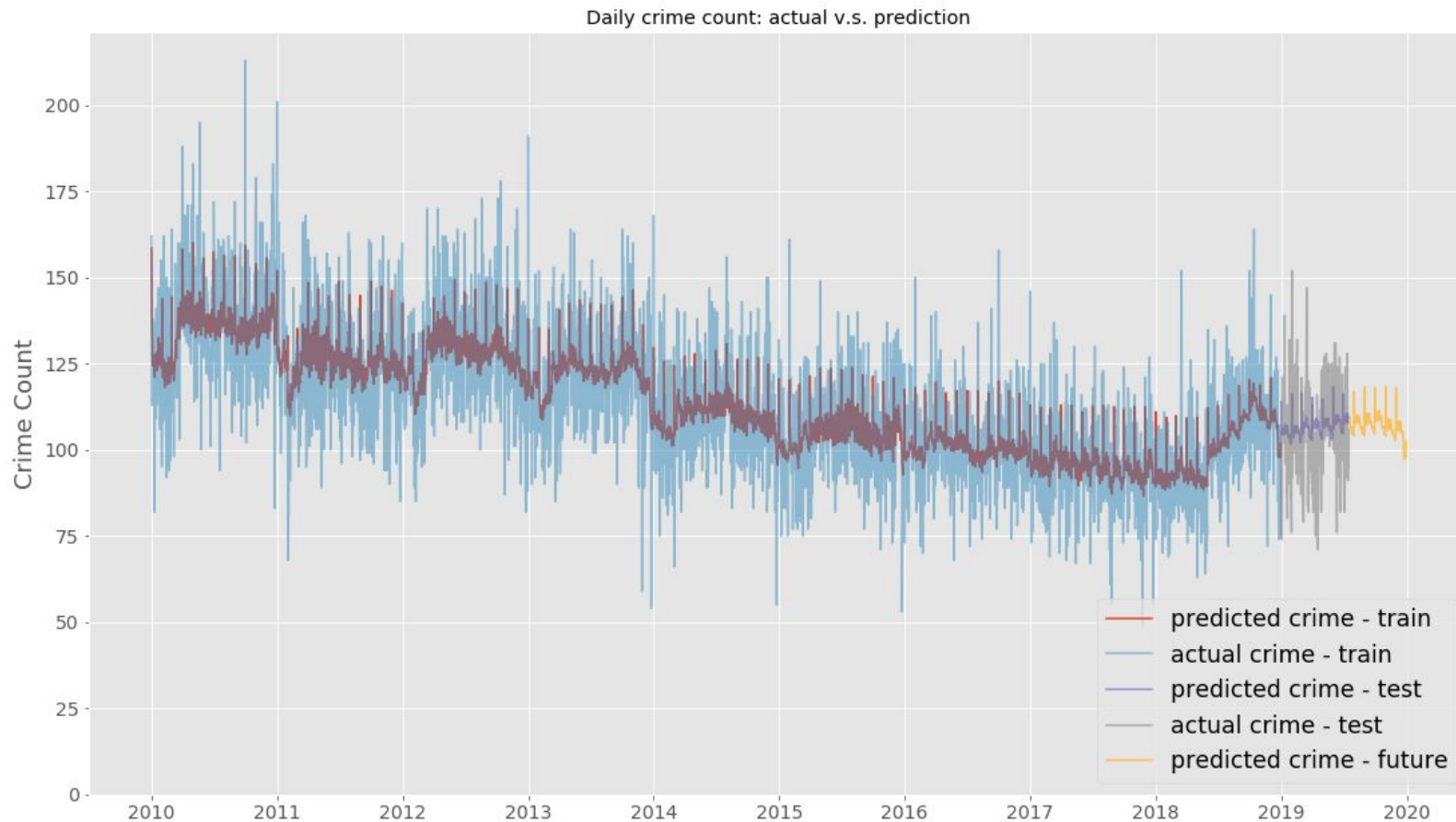


# Crime Distribution by Day of Month

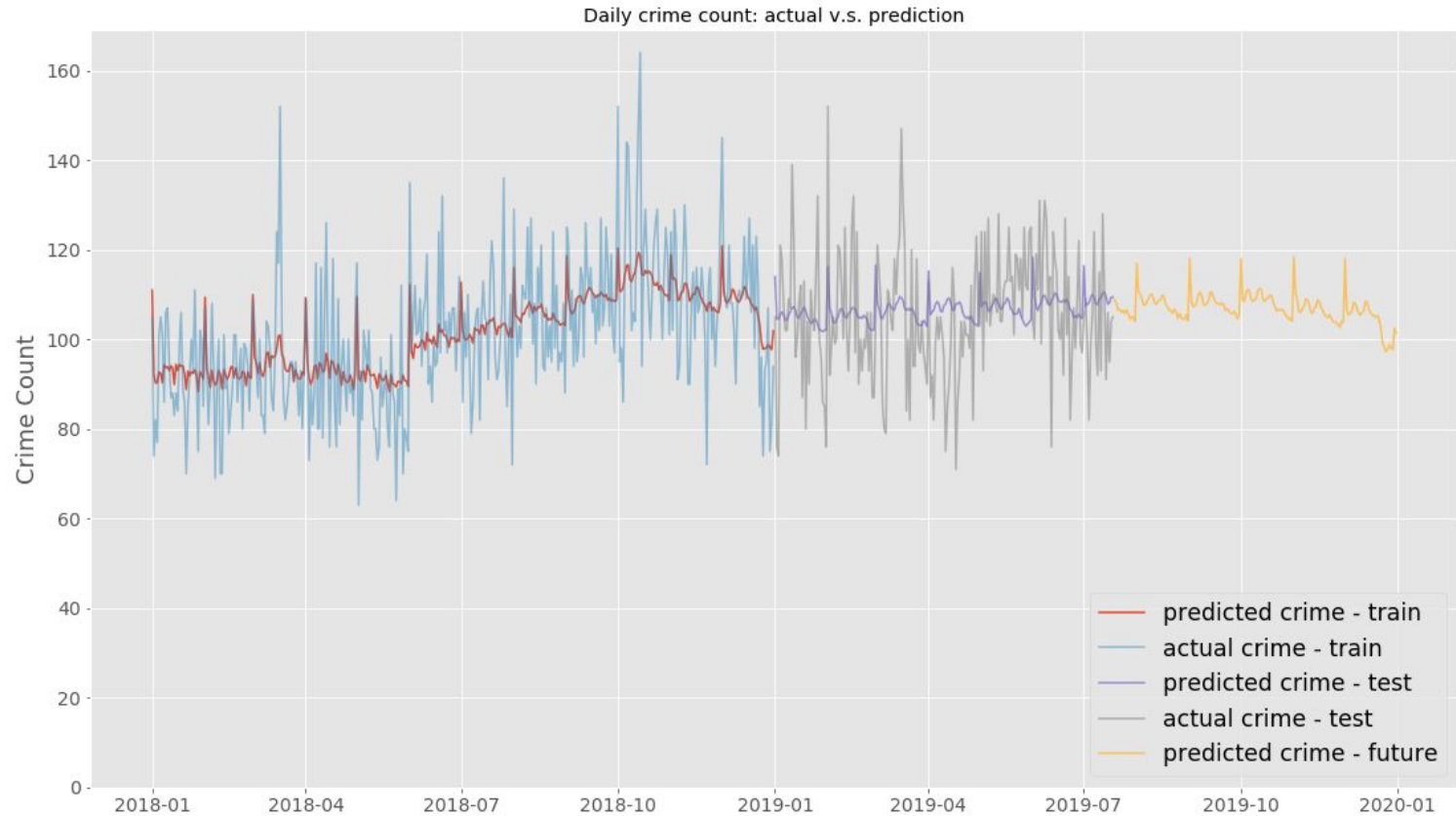


# Future Crime Rate Prediction

# Crime Rate Prediction - Random Forest Model



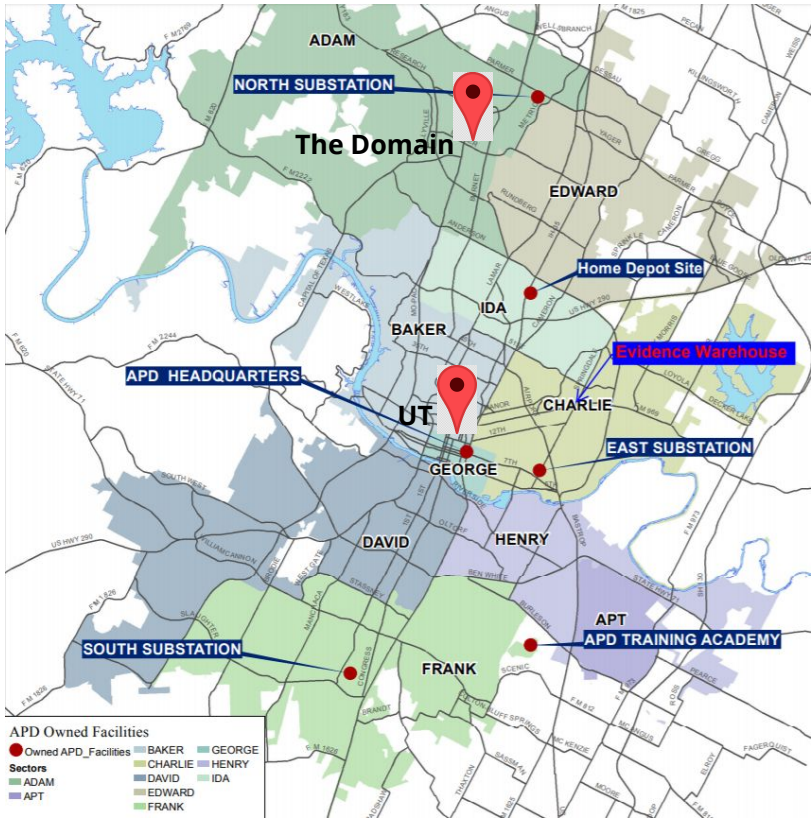
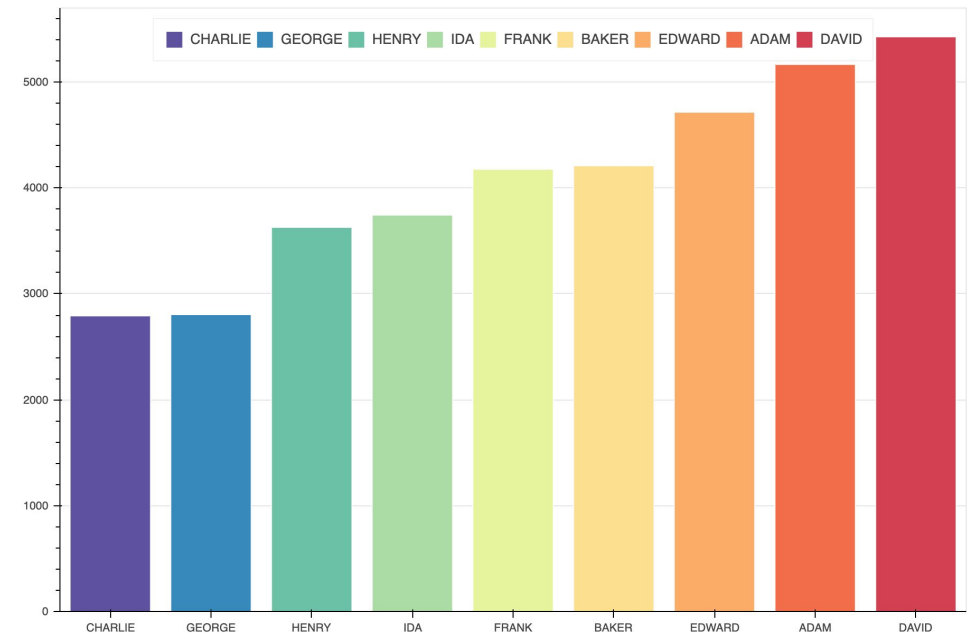
# Future Crime Rate Prediction - Random Forest Model



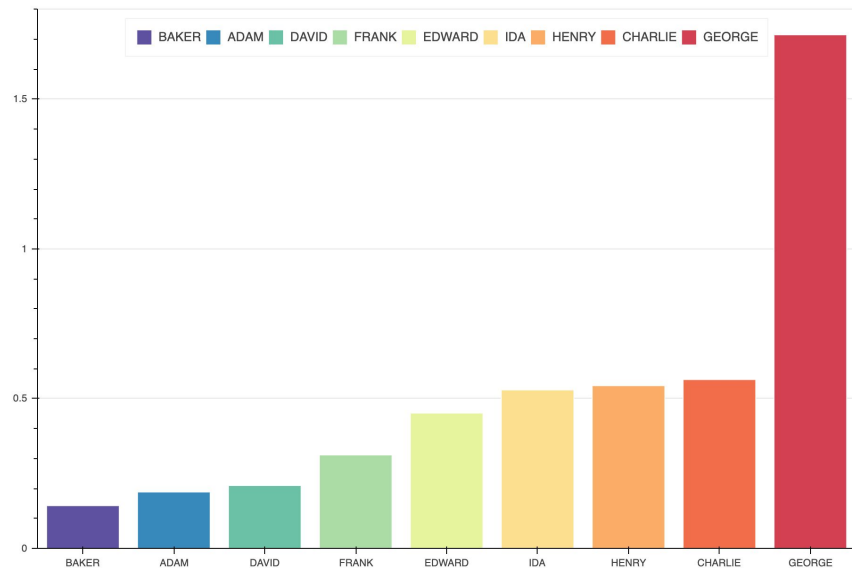
# Performance by APD Sector



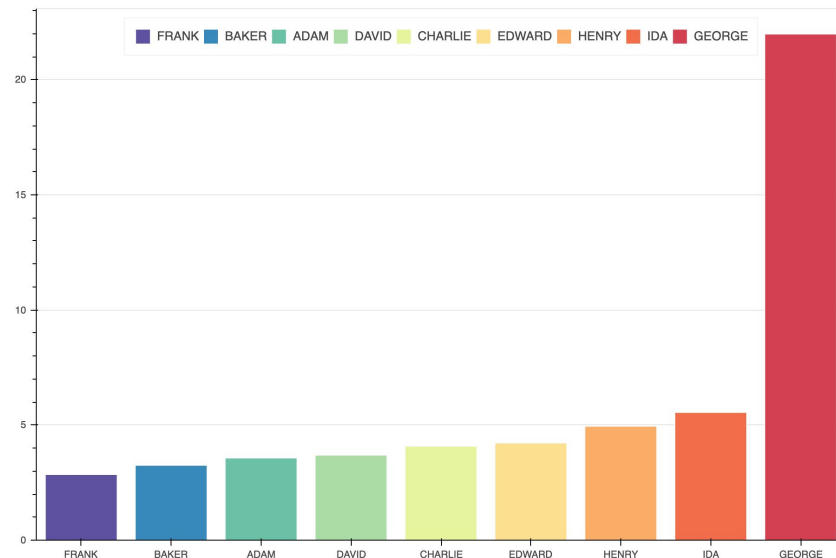
# Crime Distribution per APD Sector in 2018



# Crime Distribution by APD Sector per 100 Austinites in 2018

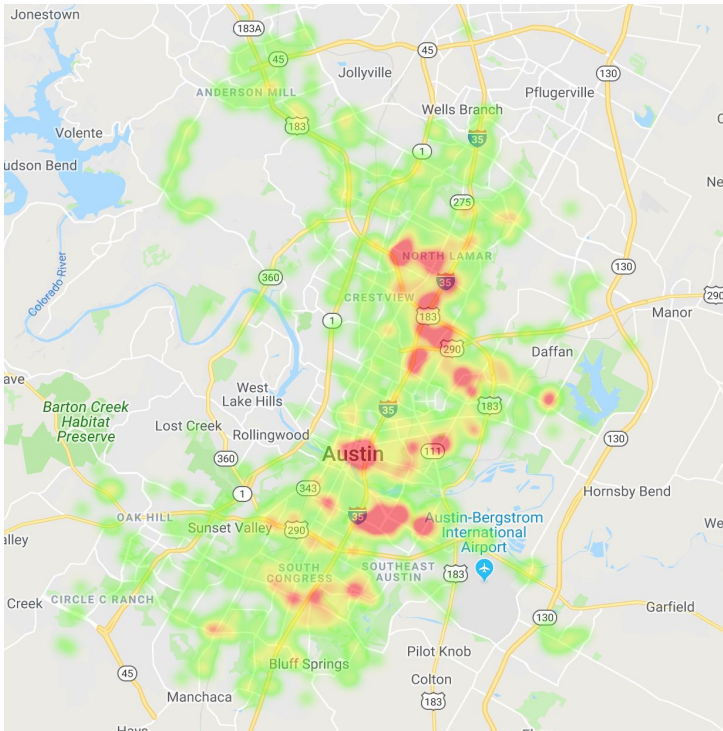


**Violent Crimes**  
Murder, Rape, Assault



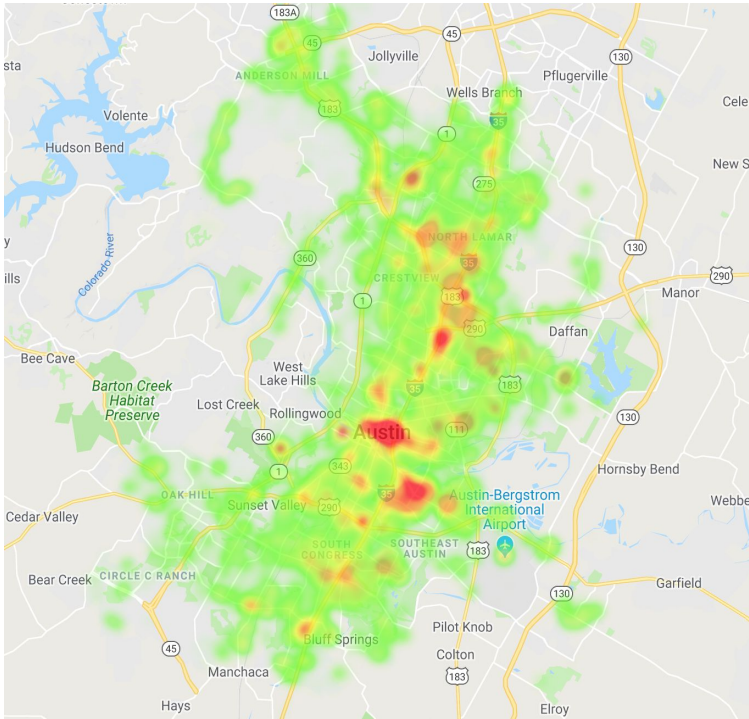
**Non-Violent Crimes**  
Burglary, Robbery, Theft, Auto Theft

# Crime Distribution in Austin



## Violent Crimes

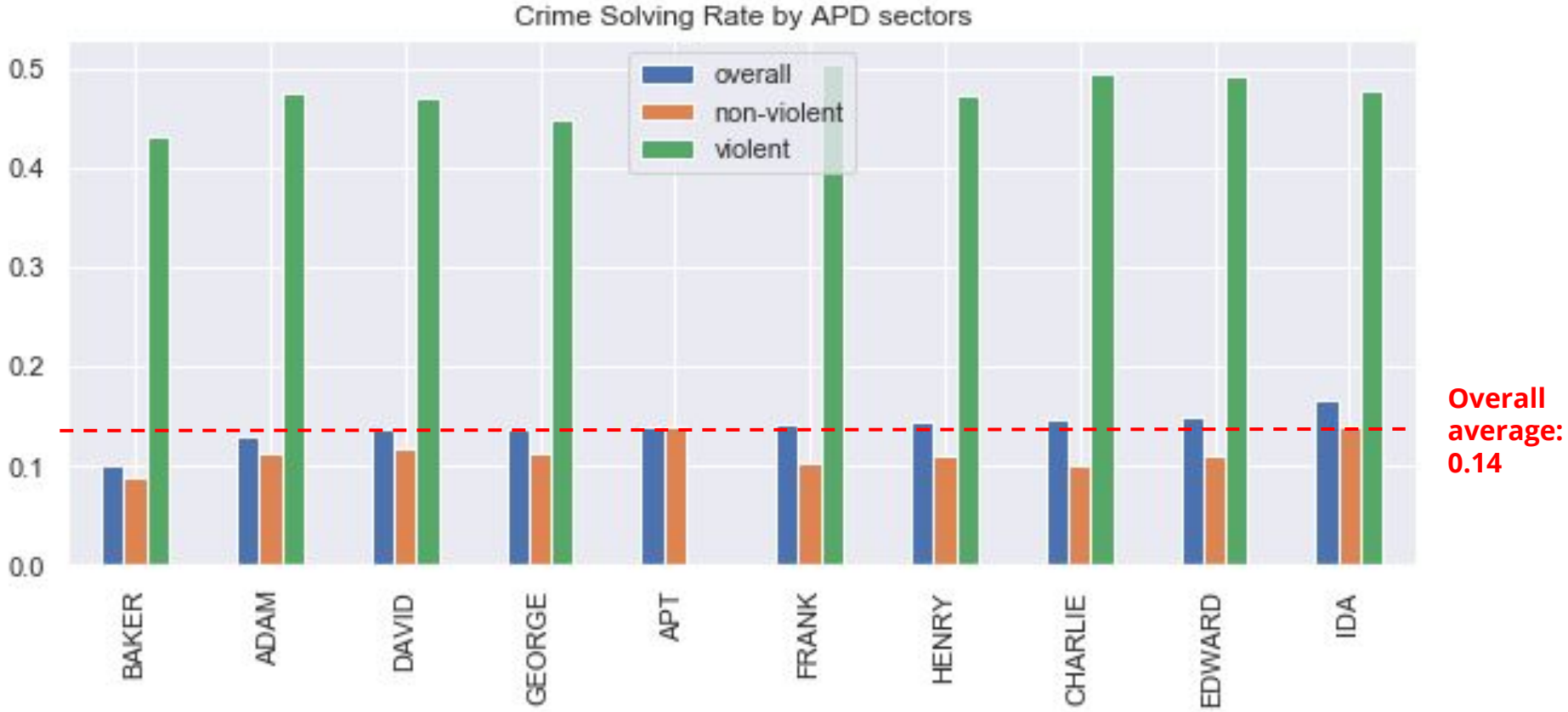
Murder, Rape, Assault



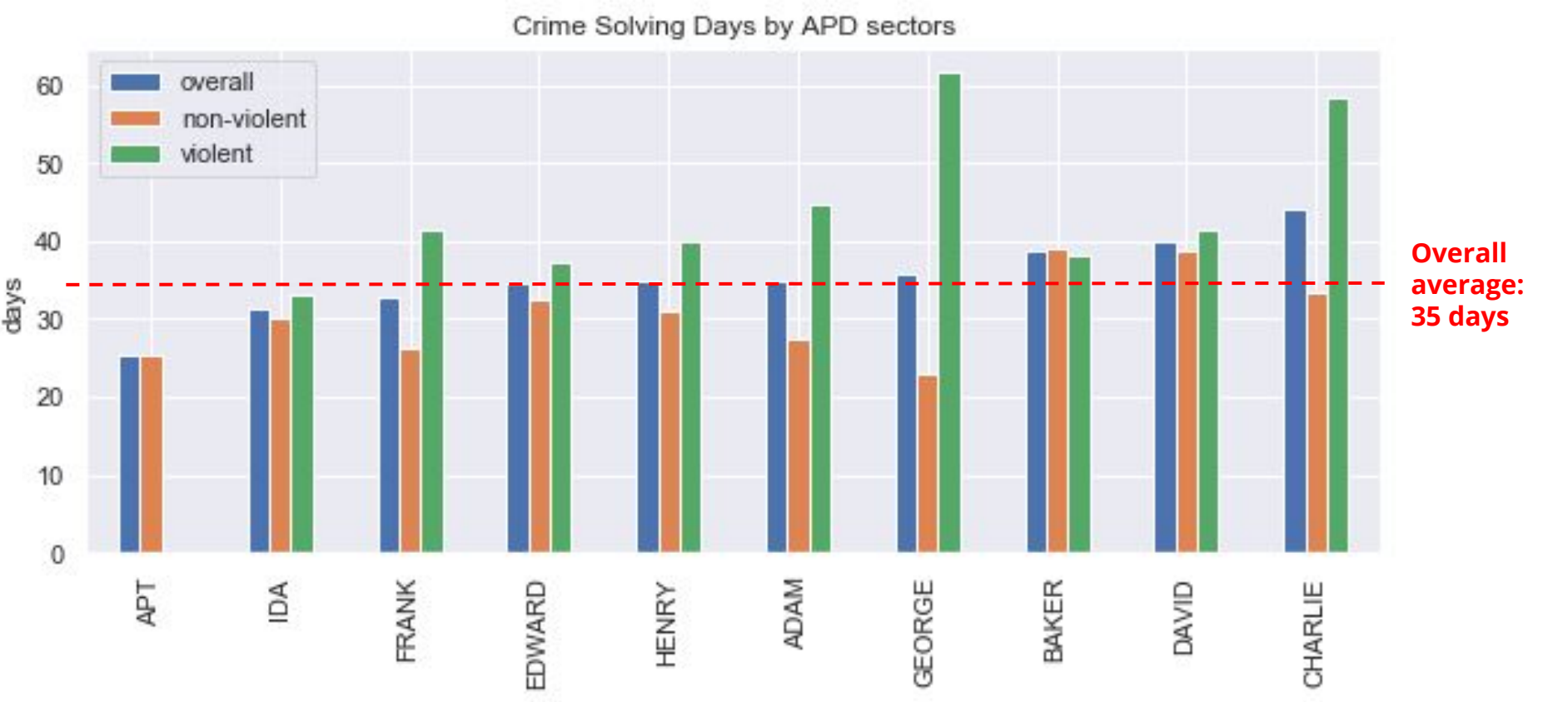
## Non-Violent Crimes

Burglary, Robbery, Theft, Auto Theft

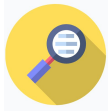
# Crime Clearance Rate by APD sectors (2018, sorted by overall rate)



# Time Taken to Solve by APD sectors (2018, sorted by overall days)



# Insights & Solutions



## Insights



Non-violent crimes have increased.  
Violent crimes have decreased.



Most non-violent crimes occur during the day.



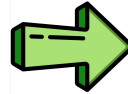
Violent crimes occur mostly at night, and  
increase during the weekends



Ida sector is most efficient in solving crime.



Baker, George and Charlie sectors are the  
least efficient in solving crime.



## Solutions

Add resources to address non-violent crimes.

Increase public awareness to be more vigilant  
of theft during the day.

Dispatch police patrol to areas of active  
nightlife.

Investigate crime solving practices utilized by  
Ida and apply to other sectors.

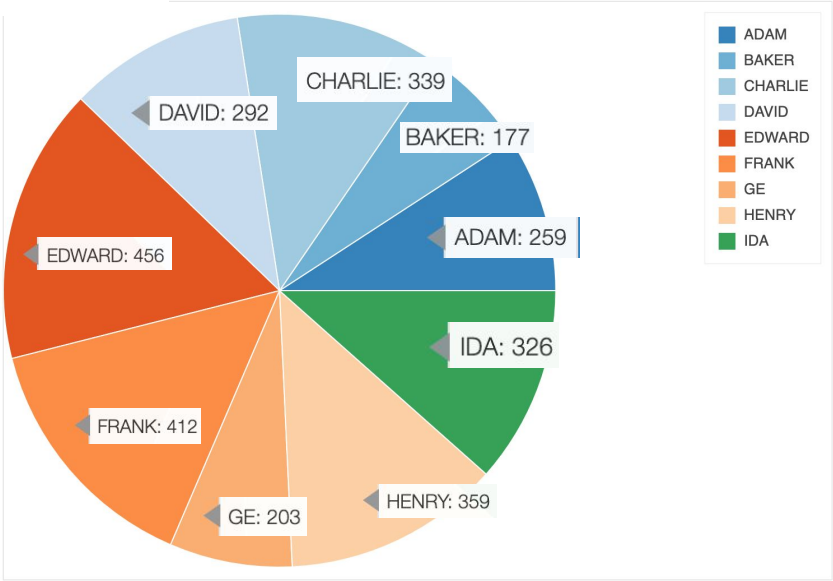
Investigate if inefficiencies are due to limited  
resources or practices and resolve  
accordingly.



**Questions?**

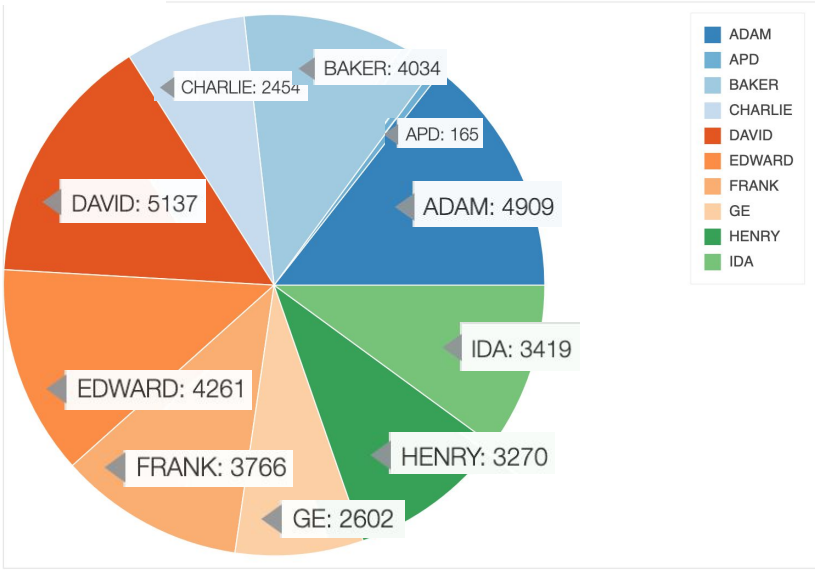


# Crime Distribution per APD Sector in 2018



Violent Crimes

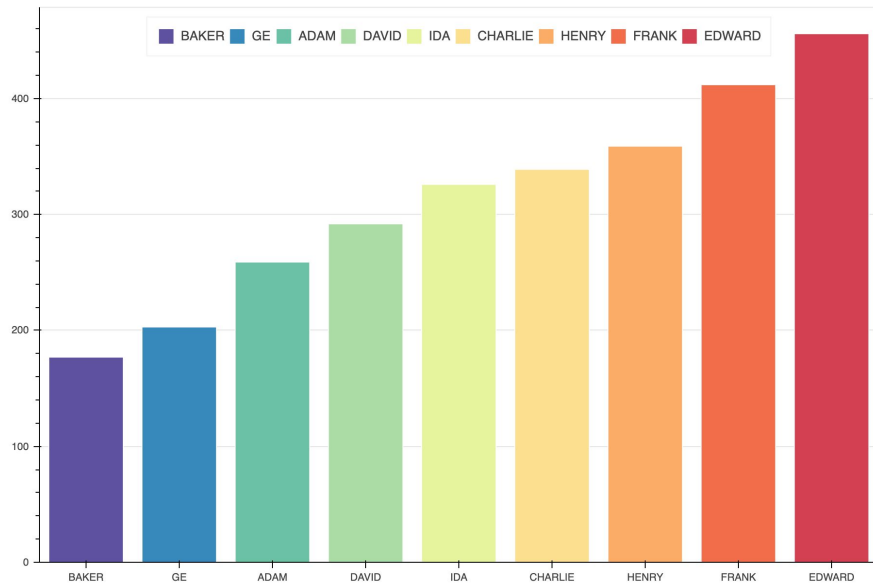
- Murder
- Rape
- Aggravated Assault



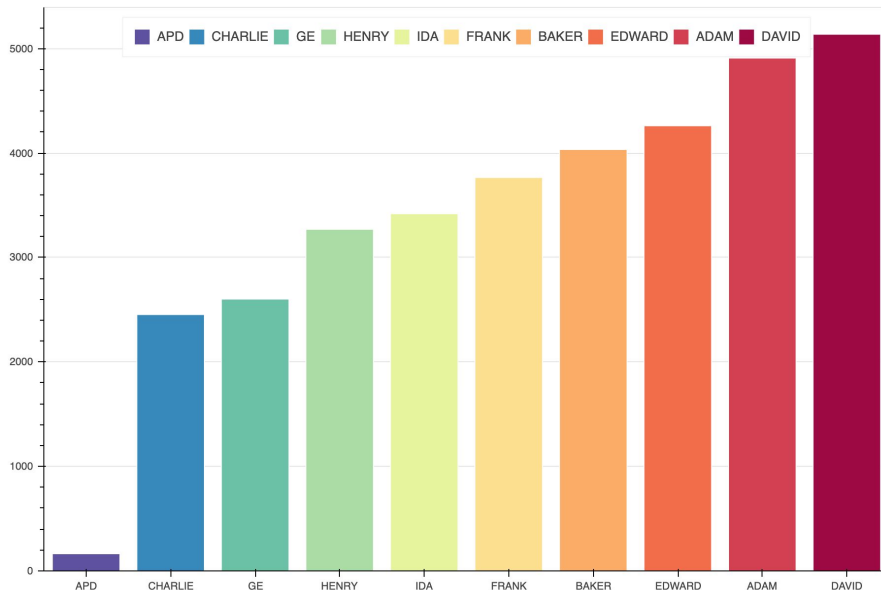
Non-Violent Crimes

- Burglary
- Robbery
- Theft
- Auto Theft

# Crime Distribution per APD Sector in 2018



**Violent Crimes**  
Murder, Rape, Assault



**Non-Violent Crimes**  
Burglary, Robbery, Theft, Auto Theft