

# **Analysis of Los Angeles Police Department (LAPD) Activity with Demographic and Economic Implications**

**LAPD  
Activity**

**Demographic  
and Economic  
Implications**

**Conclusion  
Limitations**

**QUESTIONS**

**Introduction**

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# Introduction

Job: ETL roughly eight million reports of LAPD activity and data on the City of LA's demographic and economic history

Main Goals: Discover unique insights on

- 1) Significant instances of police activity in regards to geo-spatial and temporal data
- 2) Investigating the correlation of police activity to demographic and economic data in order to raise city awareness for larger issues affecting the community

**Data**

**Experimental  
Specifications**

**WorkFlow  
Chart**

**Github**



Cluster	Nodes	Memory Size	CPU Speed	Other
Apache Hadoop IOP 4.2	Management Node (1)	RAM 48GB	12 VCPU ~3GHz	Tableau v 10.4
Apache Pig v 0.15.0_IBM_14	Data Node (3)	RAM 24 GB DATA DISK 1TB SATA	4 VCPU ~3GHz	



DATA SOURCE FROM DATA LAB AND  
CONTROLLA



FROM IBM BIGINSIGHTS DATA WAS EXTRACTED  
TRANSFORMED AND LOADED ONTO APACHE  
HADOOP USING PIG LATIN.



TABLEAU WAS USED FOR VISUALIZATION AND  
GRAPHICAL REPRESENTATION



# Github Link

Github: <https://github.com/actejas/Project-CIS5200/tree/fe81193e6a798ce770e74eb732c2c0596421c04d>



# LAPD Activity

LAPD Activity is broken down into reporting datasets collected from 2010-Present:

- Vehicles and pedestrian stops
- Crimes
- Arrests

The analysis aims to reveal themes and trends among relations found in each of the datasets

**Which LAPD Reporting District Has the Most Reports of LAPD Activity**

**Which Months are Most and Least Affected by LAPD Activity**

**The Relation of Crimes to Arrests**



# Which LAPD Reporting District Has the Most Reports of LAPD Activity

Map of LAPD Reporting Districts Having Reports of LAPD Activity

Insight: Reveals areas of interest that police resources can be focused on

**Stops**

**Crimes**

**Arrests**

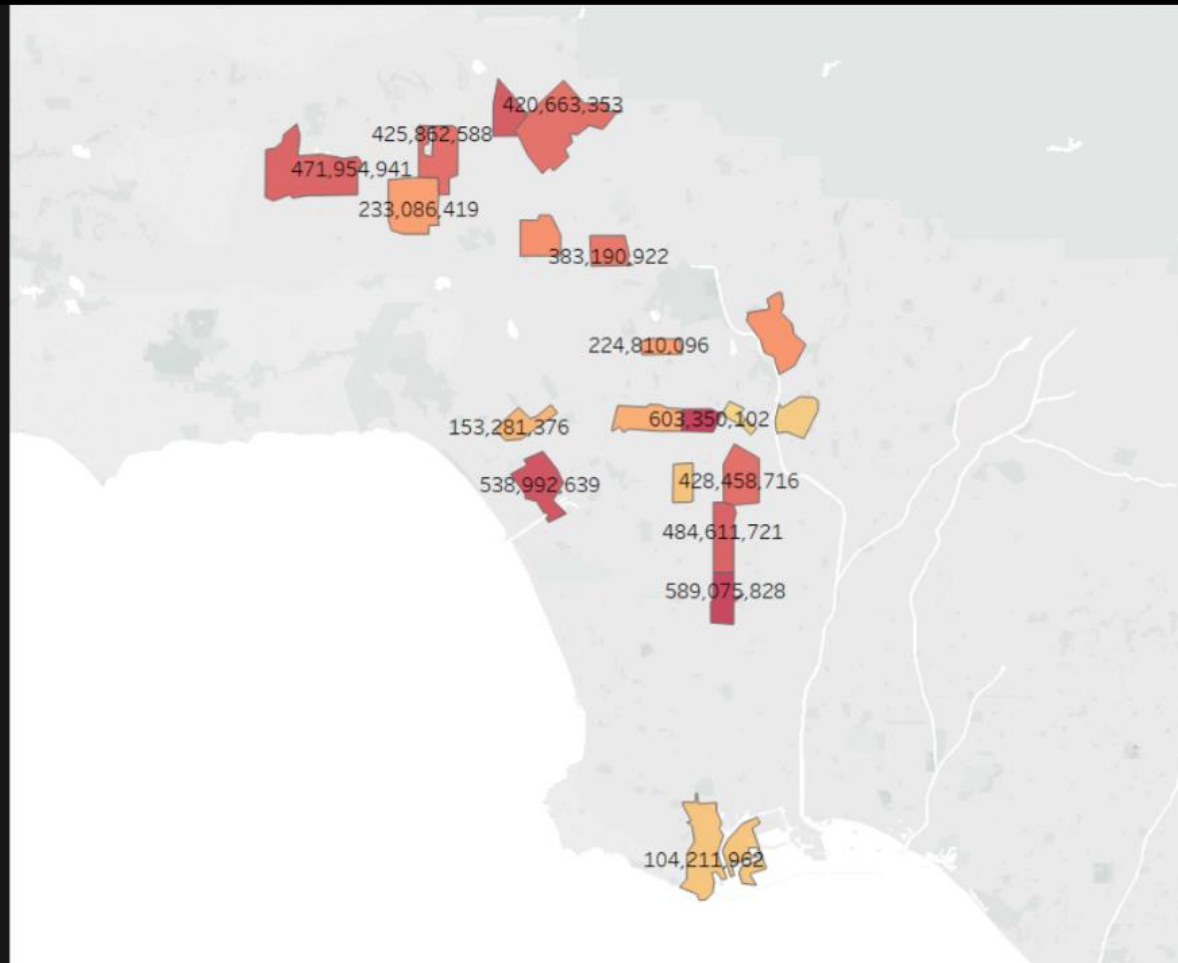




# Stops

## Top Districts

- 1) Olympic  
603,350,102
- 2) Southeast  
589,075,828
- 3) Pacific  
538,992,639
- 4) 77th  
484,611,721
- 5) Topanga  
471,954,941

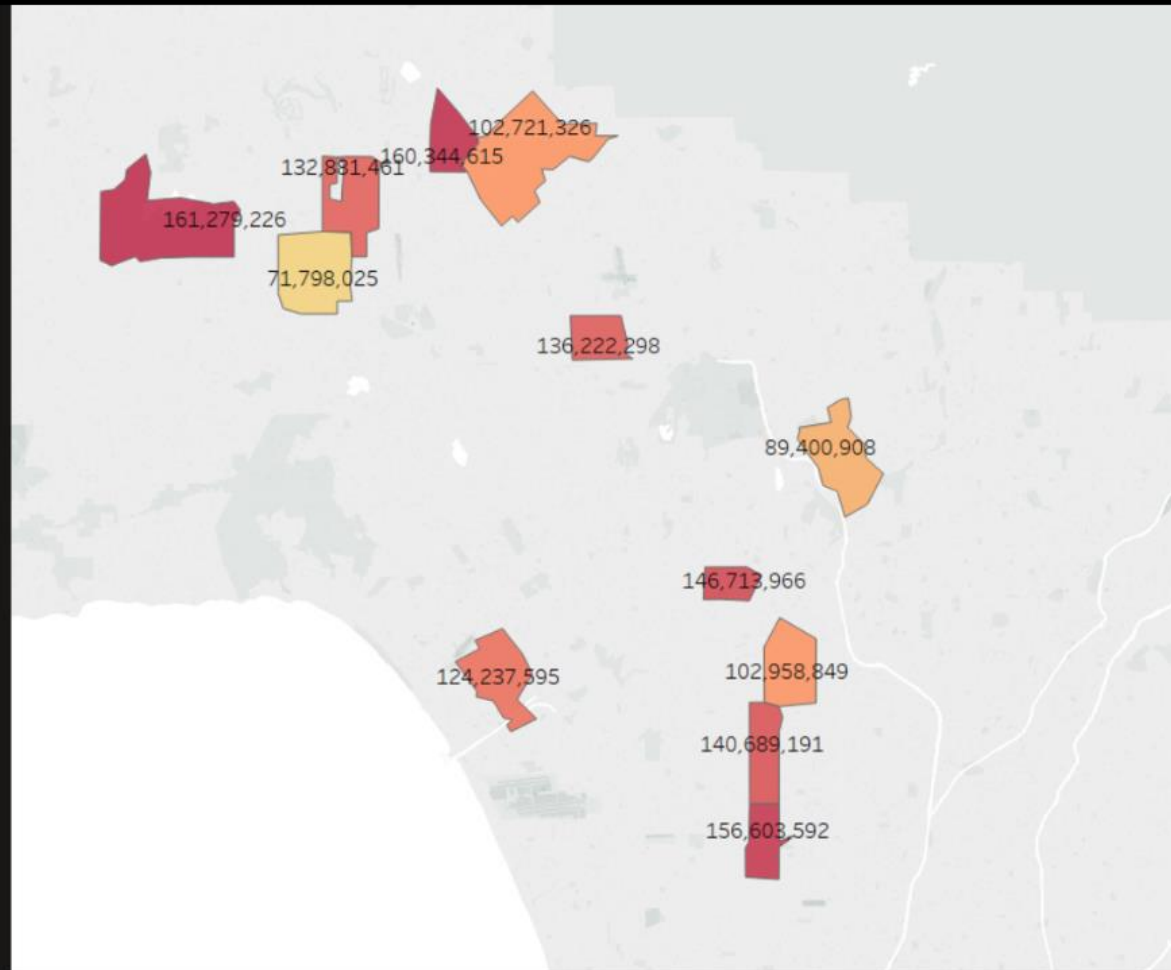




# Crimes

## Top Districts

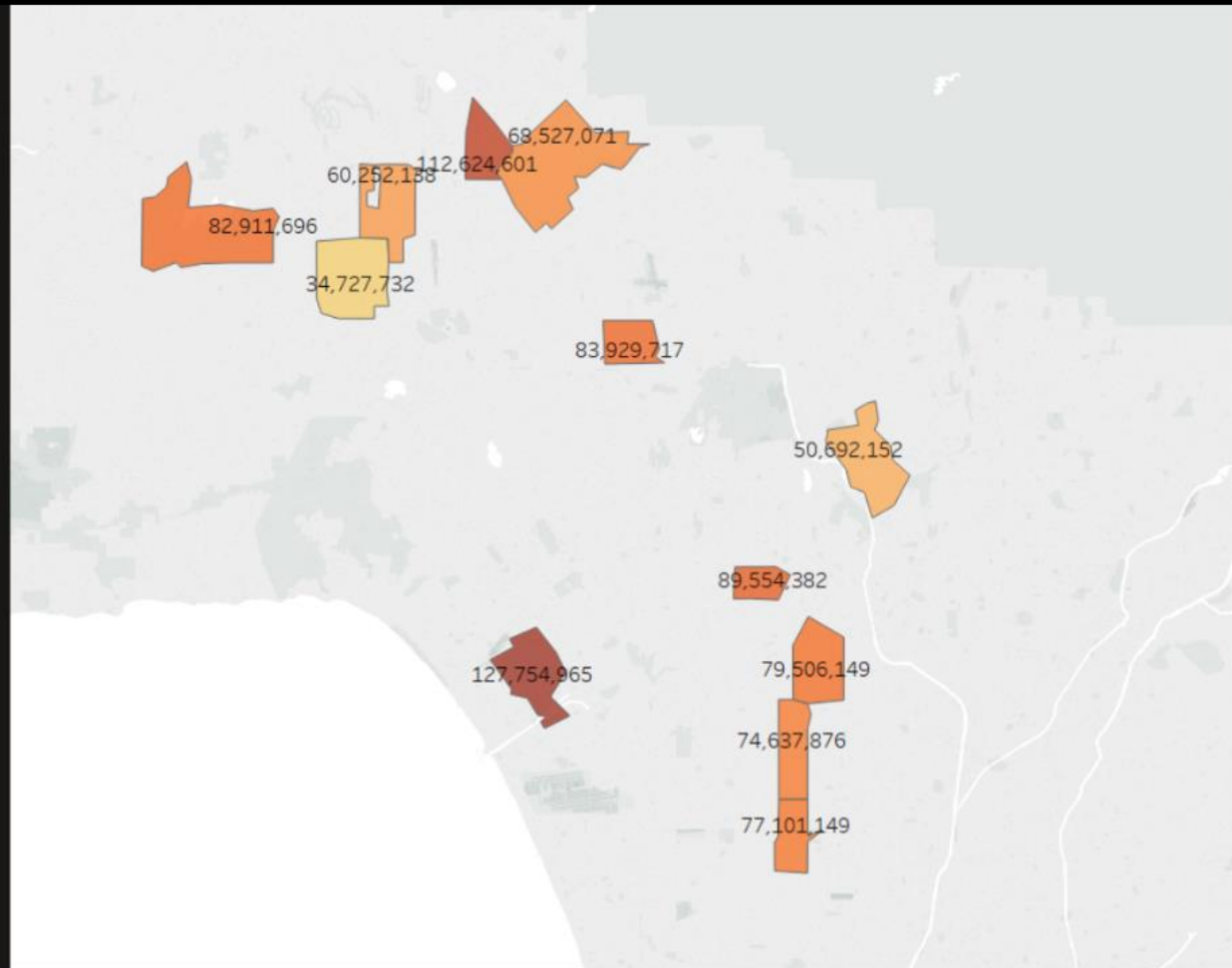
- 1) Topanga  
161,279,226
- 2) Mission  
160,344,615
- 3) Southeast  
156,603,592
- 4) Olympic  
146,713,966
- 5) 77th  
140,689,191



# Arrests

## Top Districts

- 1) Pacific  
127,754,965
- 2) Mission  
112,624,601
- 3) Olympic  
89,554,382
- 4) N. Hollywood  
83,929,717
- 5) Topanga  
82,911,696



# Which Months are Most and Least Affected by LAPD Activity

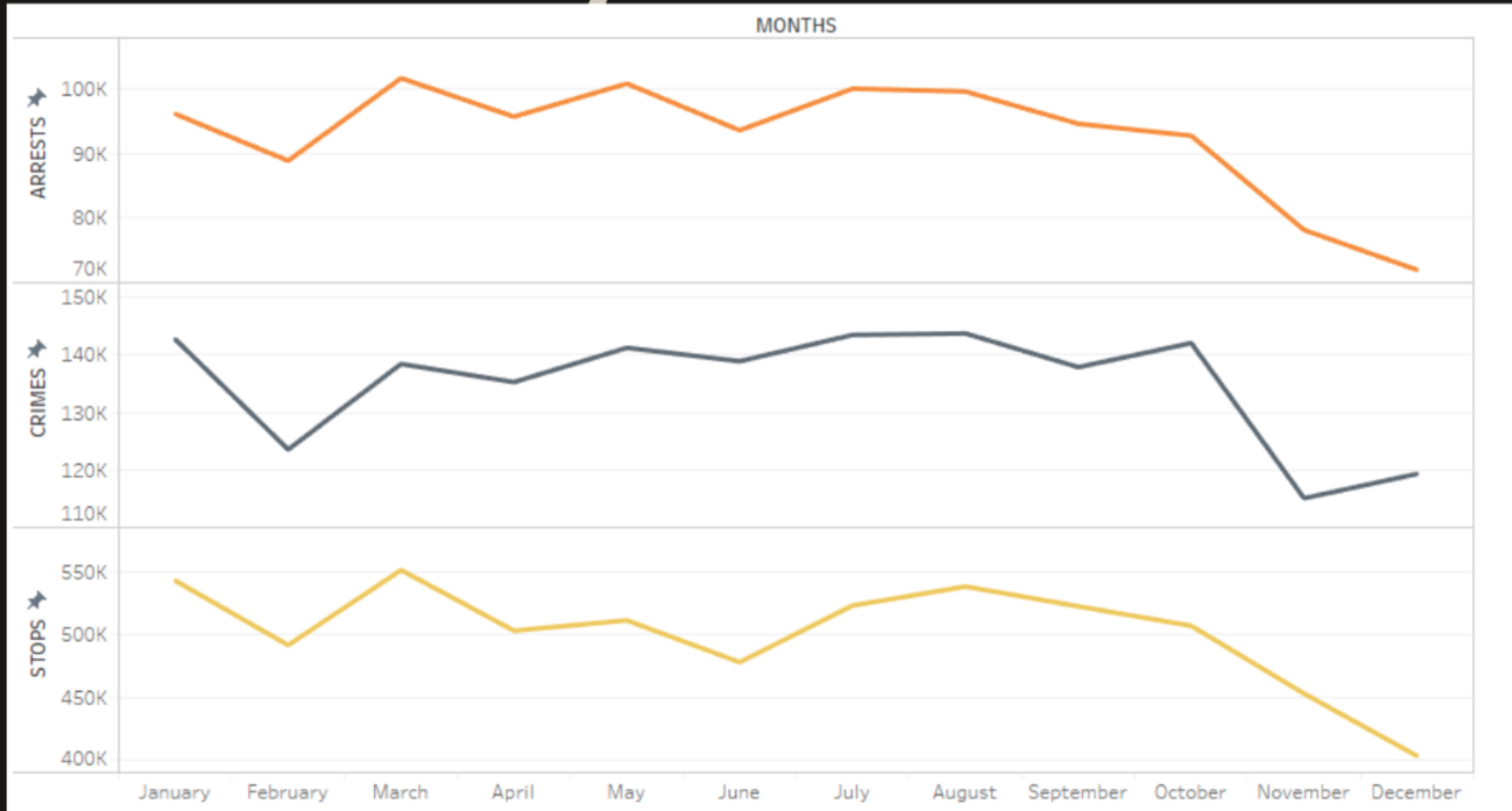
Total Average Reports of LAPD  
Activity Per Months for 2010-  
Present

Insight: Reveals months that the  
police can expect to have high and  
low activity for resource allocation

**LAPD  
Activity**

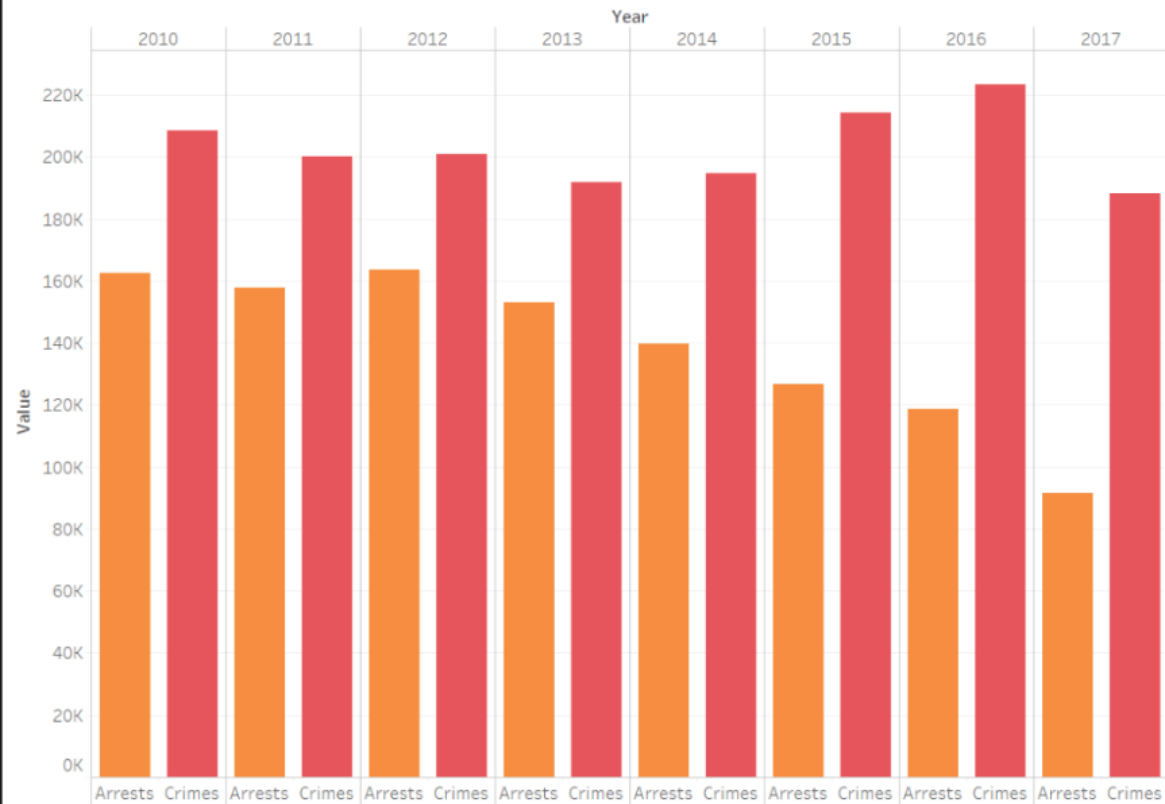


# LAPD Activity Per Month



# Comparison of Total Reports of Crimes and Total Reports of Arrests

Total Number Of Crimes And Arrests Per Year



# Demographic and Economic Implications

Here analysis is drawn from the combination of LAPD Activity data and the following datasets collected from the City of Los Angeles:

Demographic and Economic Statistics

Demographic and economic implications are drawn from LAPD Activity in order to raise public awareness of correlations between police activity and socioeconomic issues.

**Which Demographic Profile is the Most Prevalent in LAPD Activity**

**The Economic Implications of Crimes per Year**



# Which Demographic Profile is the Most Prevalent in LAPD Activity

Reveals potential forces of changes in crime rates and warrants further study on causality of socioeconomic issues on public safety

Insight: Reveals insight into most affected demographic profiles

**Descent**

**Age**

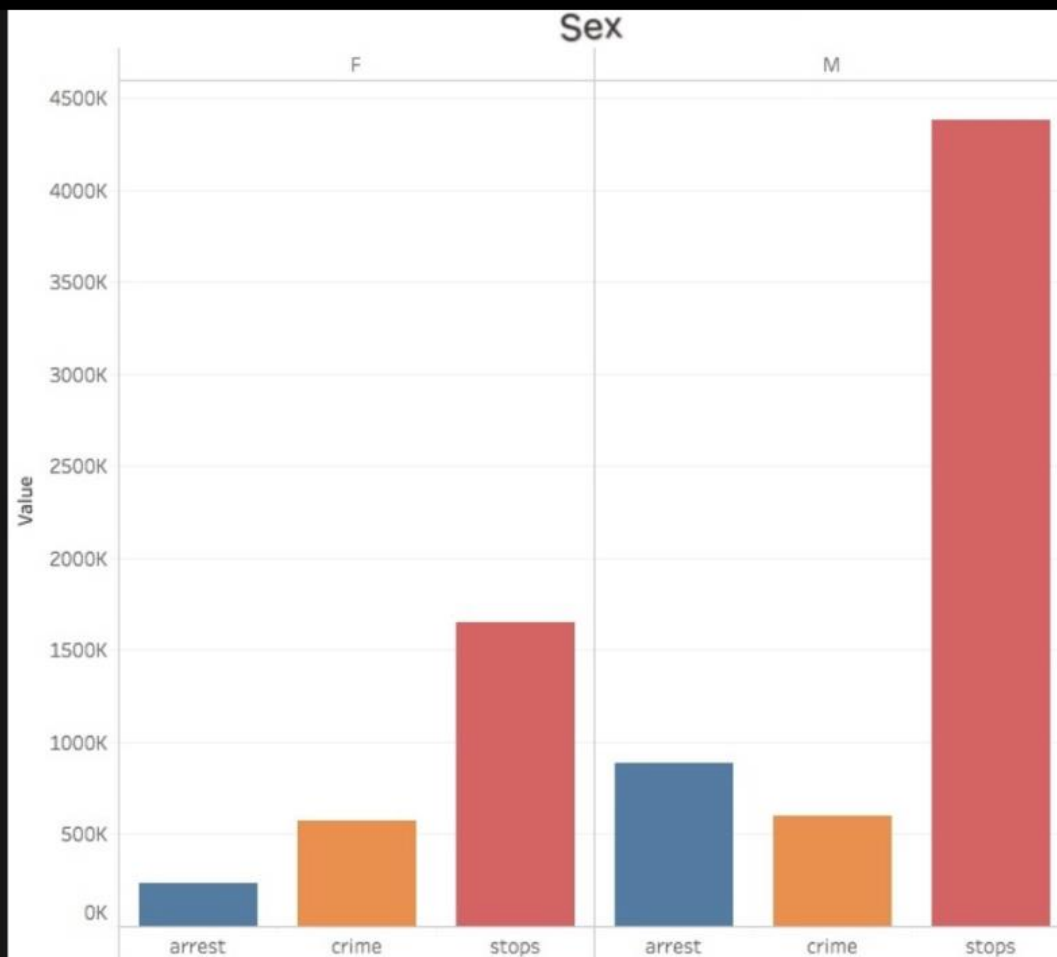
**Sex**





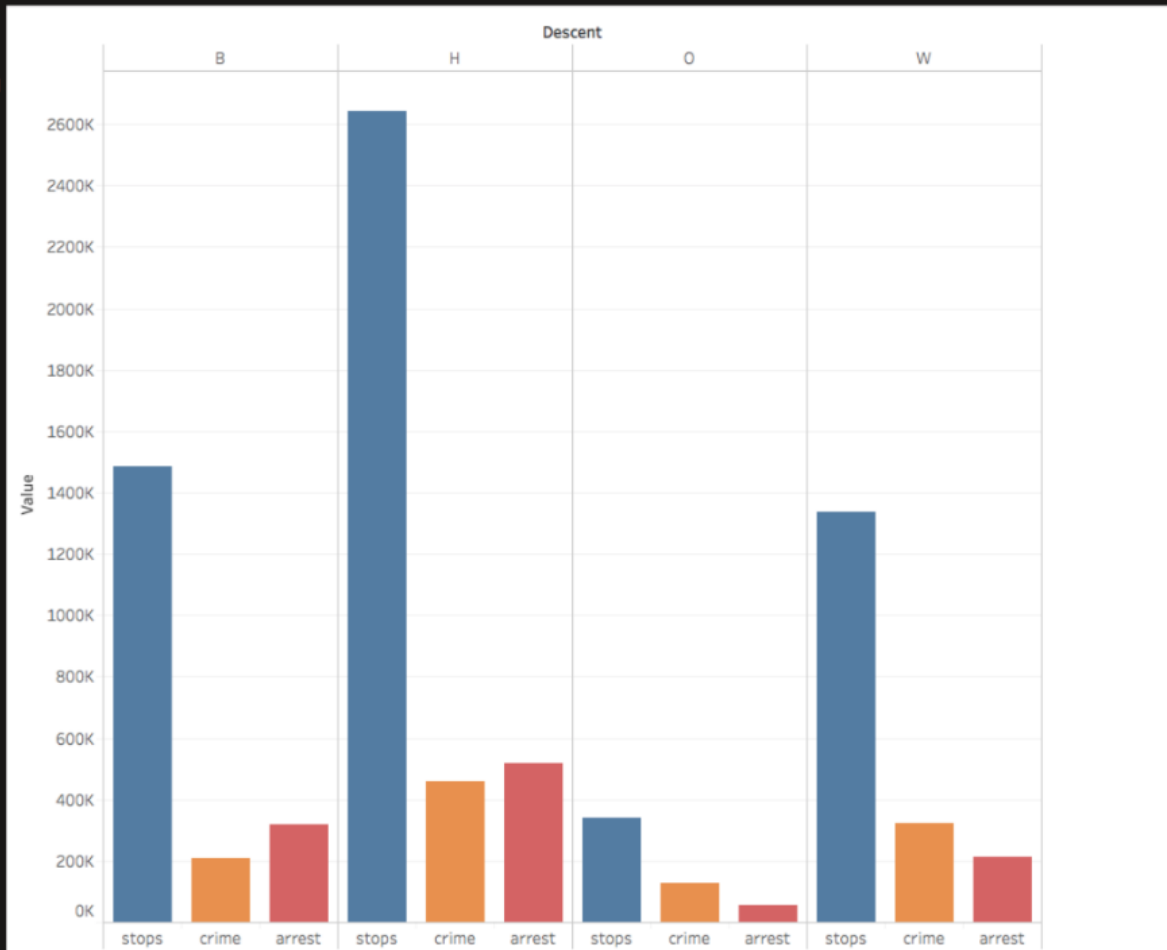
# Sex

F - FEMALE  
M - MALE



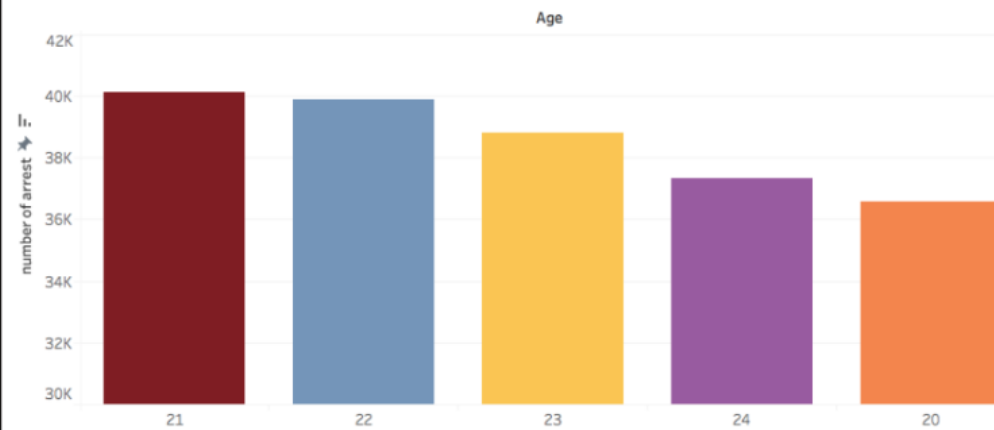
# Descent

B - BLACK  
H - HISPANIC  
O - OTHER  
W - WHITE

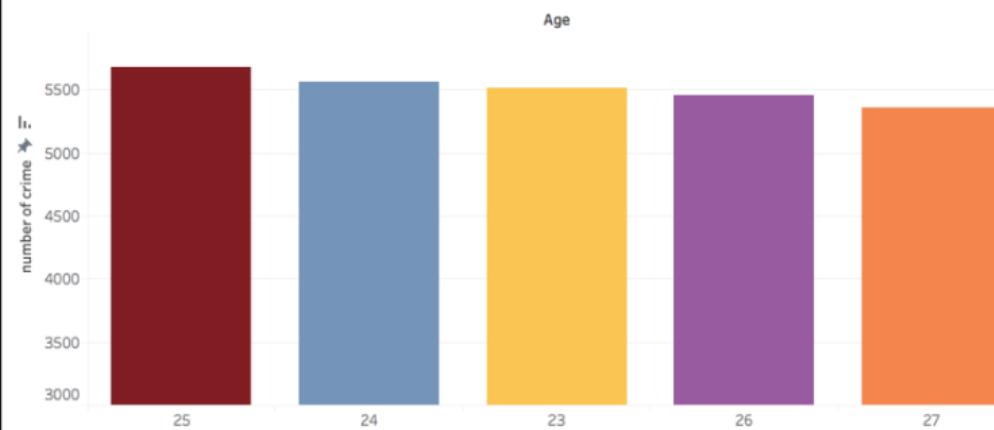


# Age

Top 5 Ages In Arrest Data



Top 5 Ages in Crime Data



## **The Economic Implications of Crimes per Year**

The correlation of socioeconomic features to crimes

Insight: Reveals potential forces of changes in crime rates and warrants further study on causality of socioeconomic issues on public safety

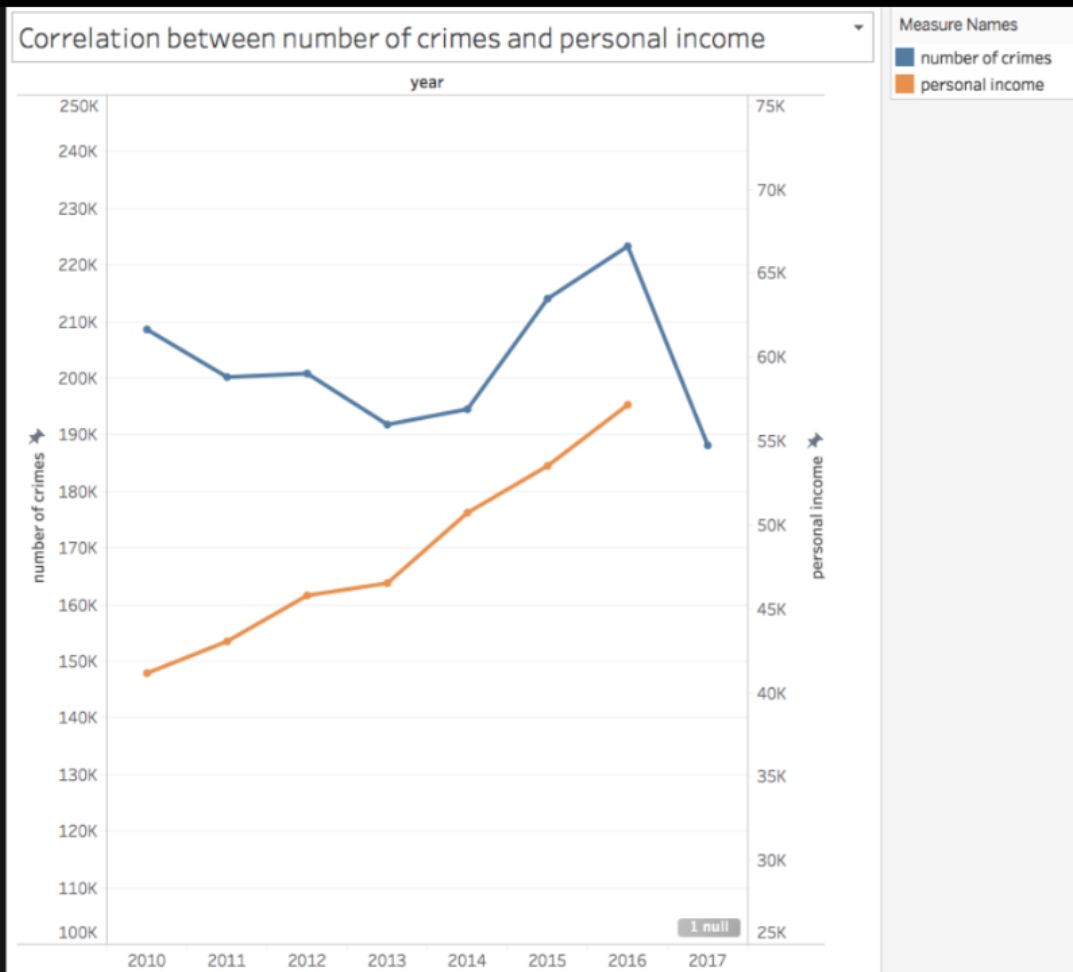
## **The Relation of Personal Income Per Capita to Crimes**

## **The Relation of Public School Enrollment to Crimes**

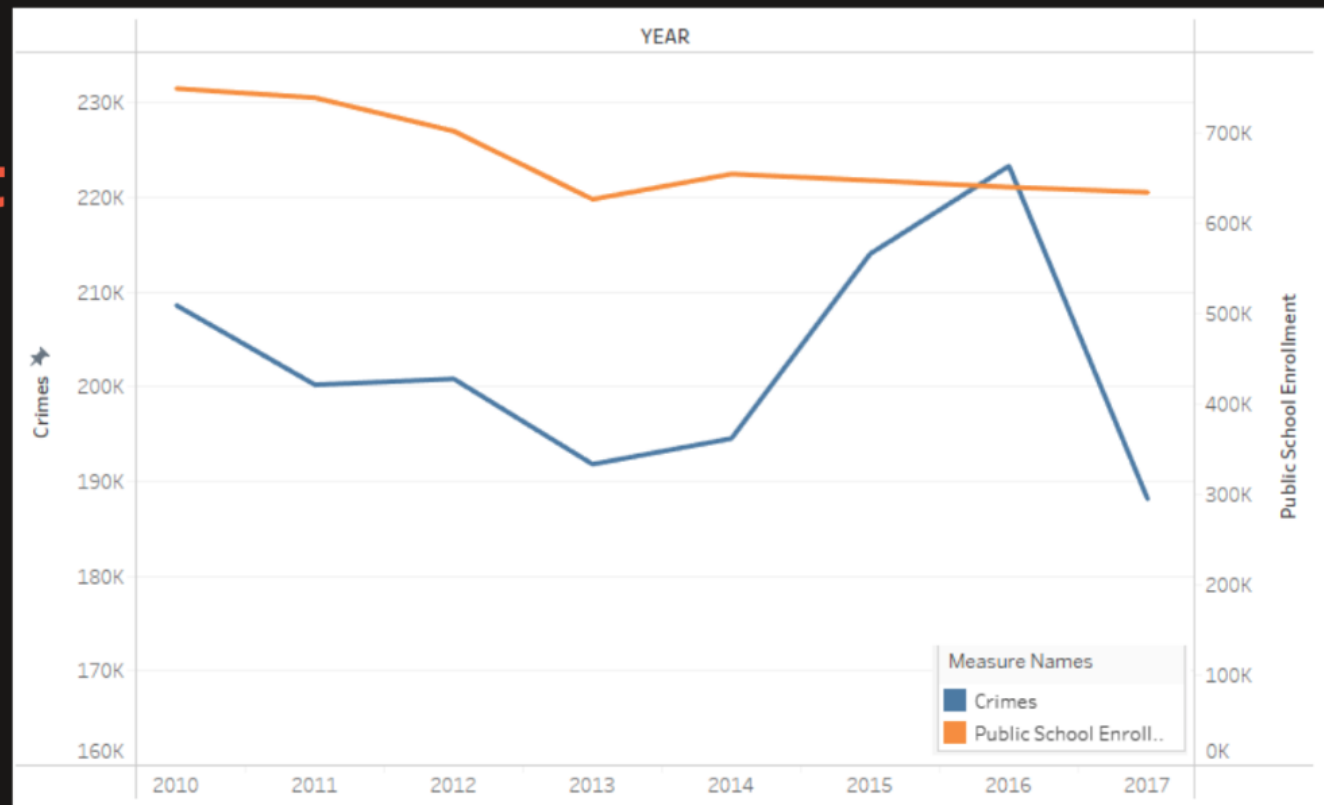
## **The Relation of Unemployment Rate to Crimes**



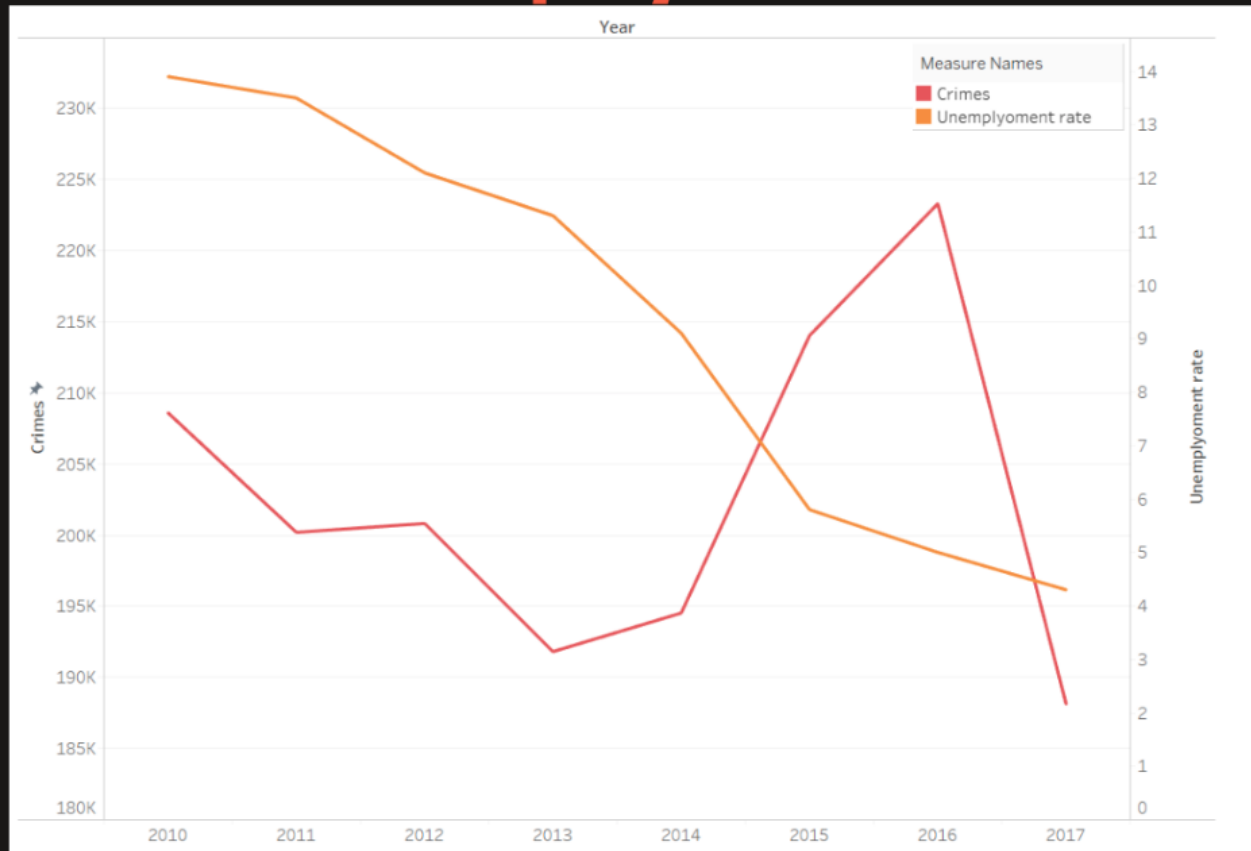
# The Relation of Personal Income Per Capita to Crimes



# The Relation of Public School Enrollment to Crimes



# The Relation of Unemployment Rate to Crimes





# Limitations

For the purposes of CIS5200, this project could not use predictive analysis and regression tools for causality. MatLab was attempted but there was not enough data for curve fitting. Correlations were made by side by side graphical comparisons and estimations.

These correlations should warrant further study on the implications of police activity and variable socioeconomic factors in any given city using similar tools and methods.



# Conclusion

Analysis into "LAPD Activity" provides insight into significant times and locations where police can focus valuable resources including budgeting, manpower, energy, etc.

Analysis into "Demographic and Economic Implications" provide justification behind political and socioeconomic initiatives that may be sought after by policymakers and leaders in the community.

Our project continues on the key themes of public safety, open transparency, accountability, civic engagement, public benefit from government open source, integrity of services, and public resilience.



# QUESTIONS



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