

How to Avoid a Parking Ticket? (A San Diego Parking Tickets Analysis)

Group 10



MOTIVATION

The Game of the Brave

But...

I always lose



MOTIVATION

A gift that we always hate...

- **Parking Ticket: a piece of paper which can easily ruin your day**
 - Every San Diegan have parking stories of their own
- **Well, at least we contribute to the beautiful city**
 - In the last 10 years, San Diego handed out 5 million+ parking tickets, bringing \$300 million to city's fund



MOTIVATION

So...

How To Dodge the Bullet?

We'll Let Data Speak

- We analyzed information about the time and space characteristics of parking citations in SD.



DATASET

- **Parking Citations Datasets from the San Diego, City Treasurer's Website**
 - **Labels: location (street address), date of issuance, violation code, issue sector and fine amount**
 - **2012 - 2023, Daily Frequency**

Also Used:

- **Population Datasets from US Census Data Recorded by the US Census Bureau**
 - **2012 - 2023, Yearly Frequency**
- **Parking Meters Datasets from the San Diego, City Treasurer's Website**
 - **2018 - 2023, Daily Frequency**

Parking Citations

Parking citations issued since 2012

Resources

RESOURCE	TYPE	DOWNLOAD	PREVIEW
Parking Citations 2023, July-Dec	CSV		
Parking Citations 2023, Jan-June	CSV		
Parking Citations 2022, July-Dec	CSV		

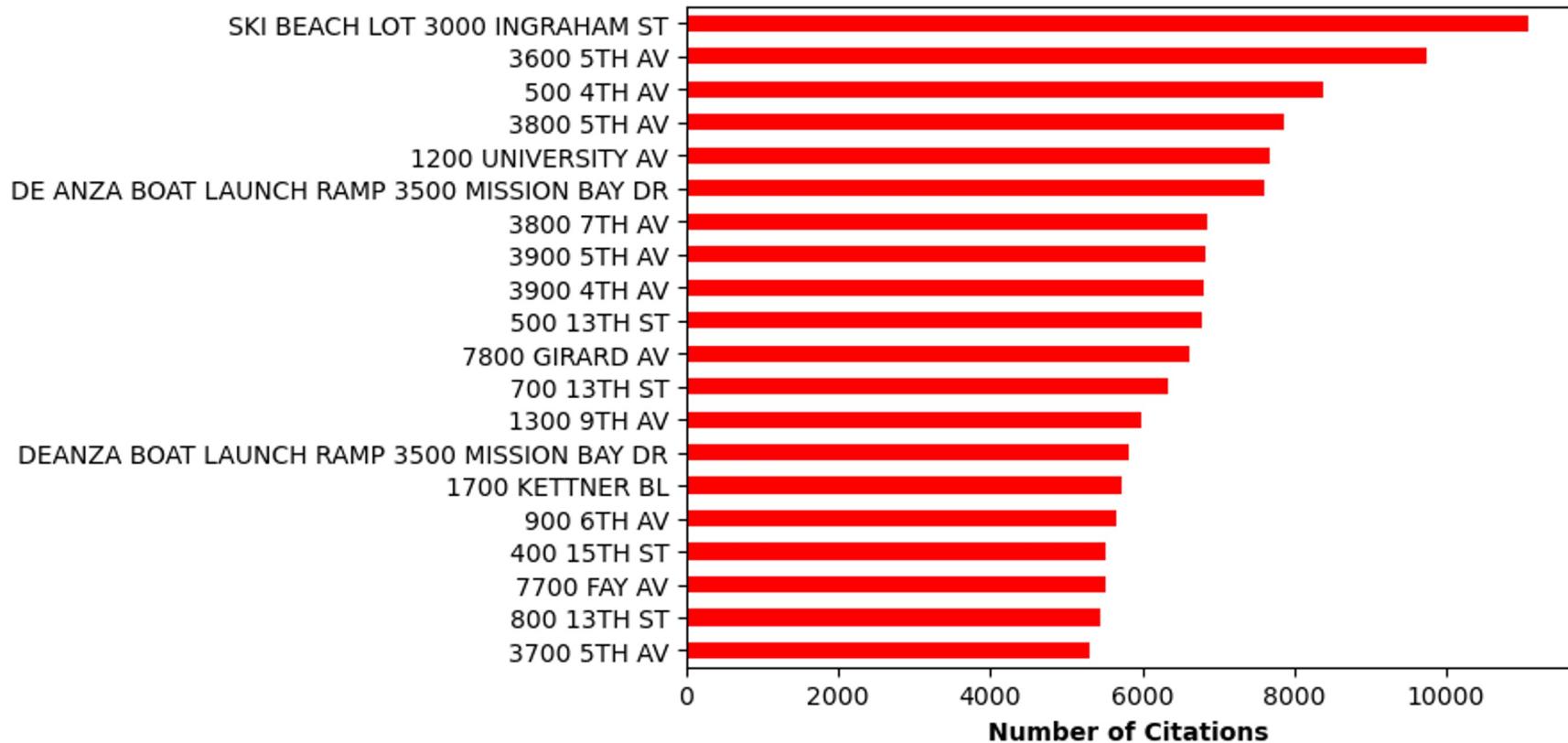
Dictionary

This is a preview. If you would like to view the full resource, please download it above.

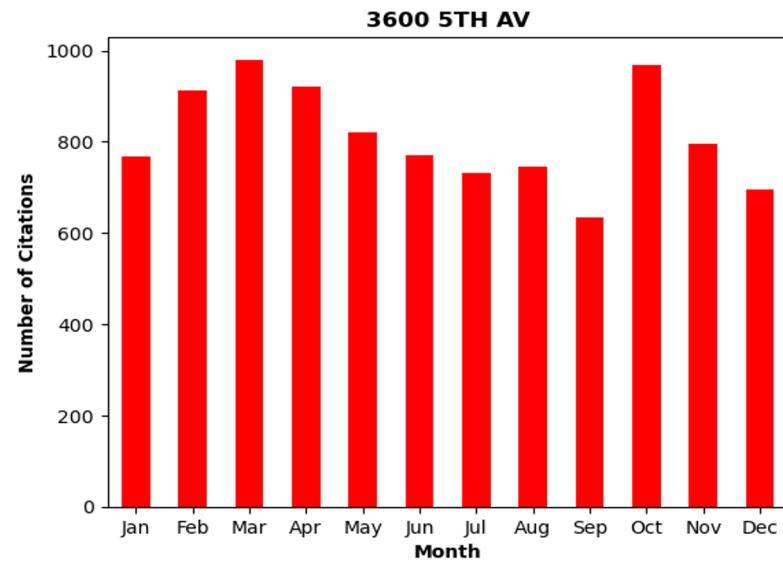
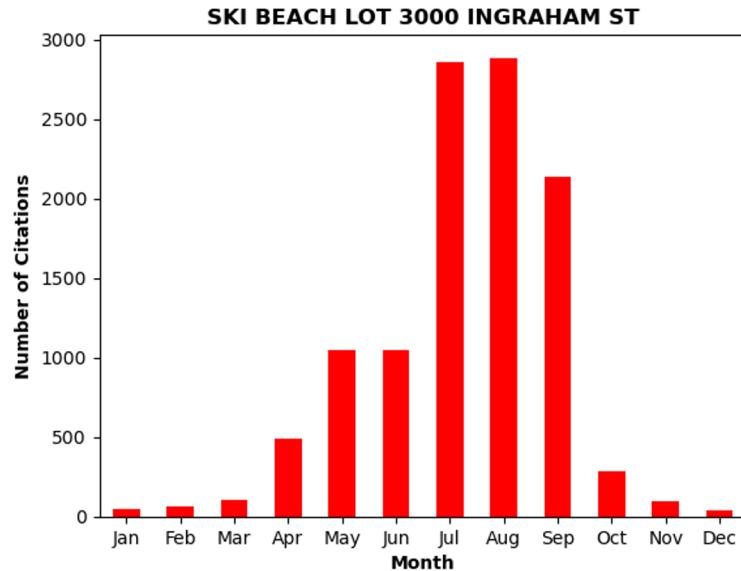
FIELD	DESCRIPTION
citation_id	Unique parking citation identification number
date_issue	The date the parking citation was issued
date_creation	The date the citation record entered the system
location	The location of the parking violation as entered by the issuing officer
sector1	The issuing department/agency. Will be City issued citations only
vio_code	The State or local code section violated
vio_desc	The name/description of the violation code
vio_fine	The citation fine amount

Top Numbers

Top 20 Locations with Most Citations



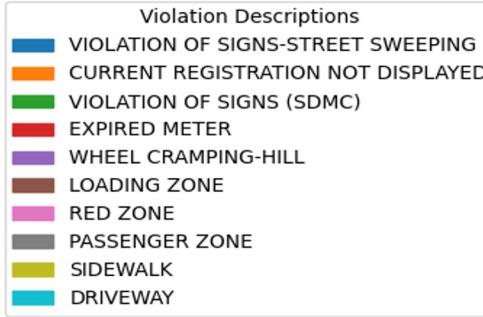
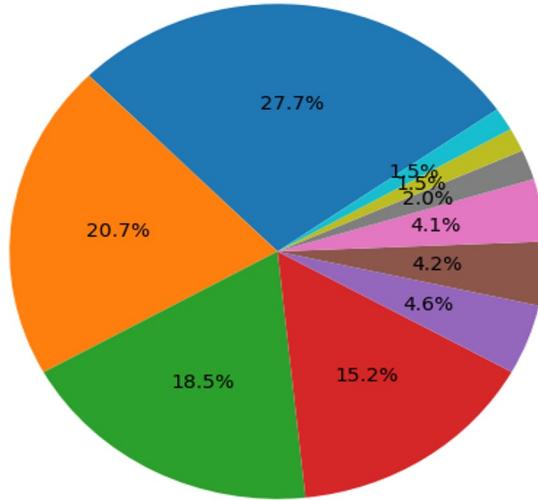
Monthly Distribution of Citations (Top 2 Locations) (2012-2023)



SKI Beach peaks in summer with tourists.
5th & 4th Ave, the heart of nightlife of San Diego.



Top Ten Violations Descriptions



Street Sweeping: 25%+ Share.
Schedule variations combined with the most overlooked sign.

Interestingly, it amounted to \$100k+ on Mission Beach due to regular debris from ocean.



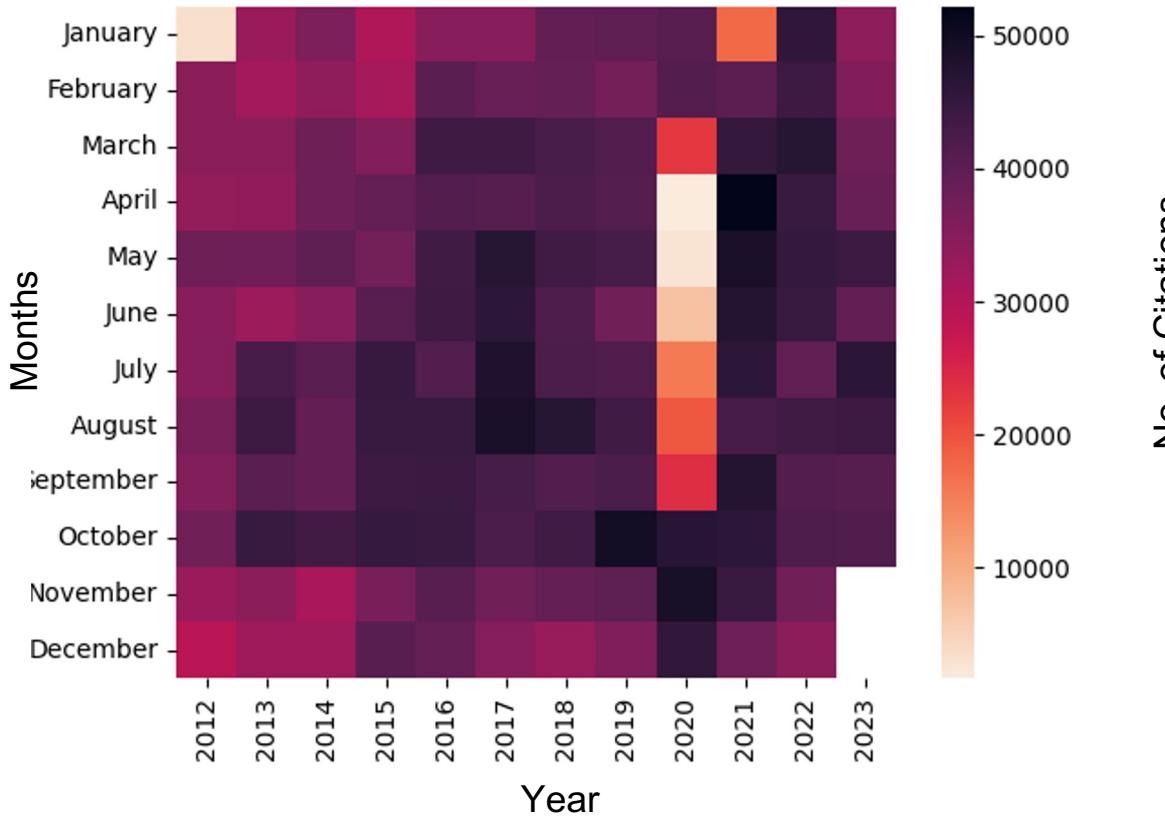
Maybe...

More Likely to Get A Ticket on

Some Day

?

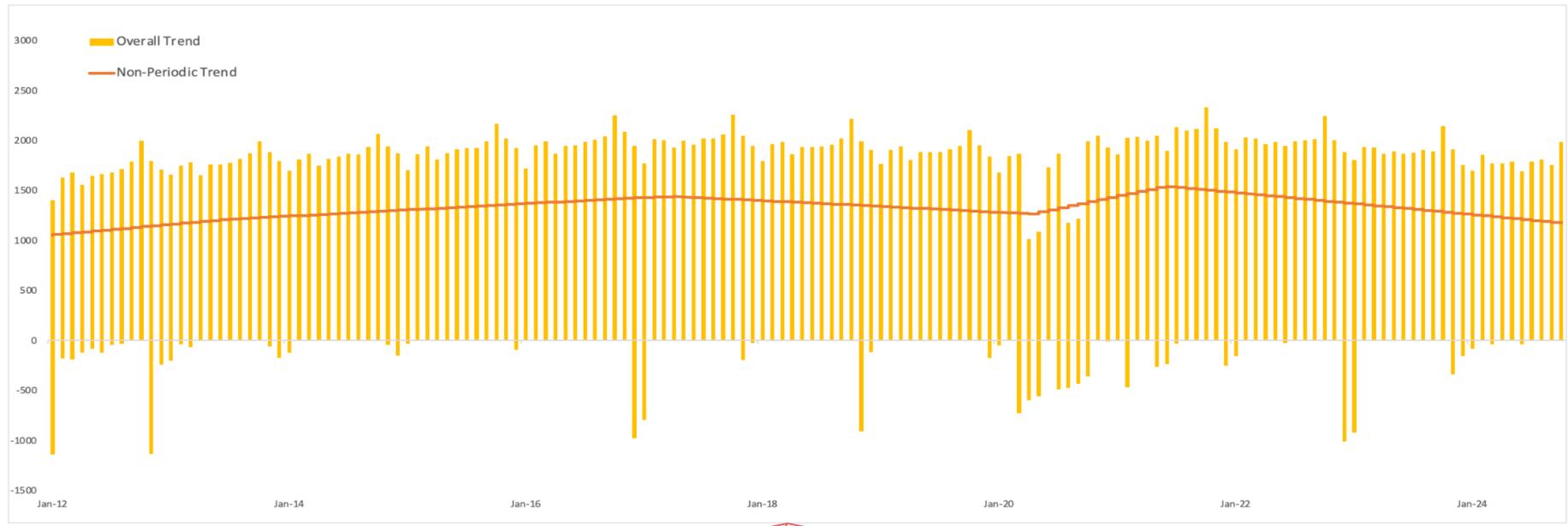
Time Series Heatmap (Monthly)



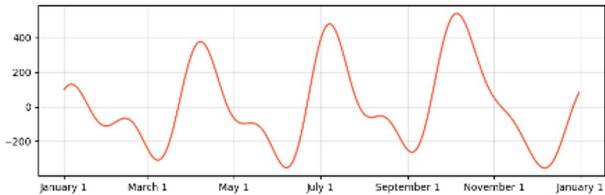
Spring & Summer of 2020 shows a sharp decline due to pandemic.
For San Diego, Summer Tourism: High Parking Citations.



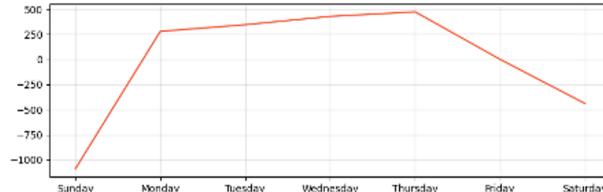
Seasonal Decompose



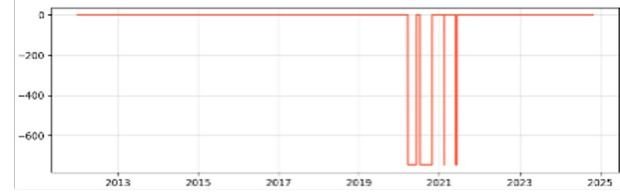
Yearly Trend



Weekly Trend



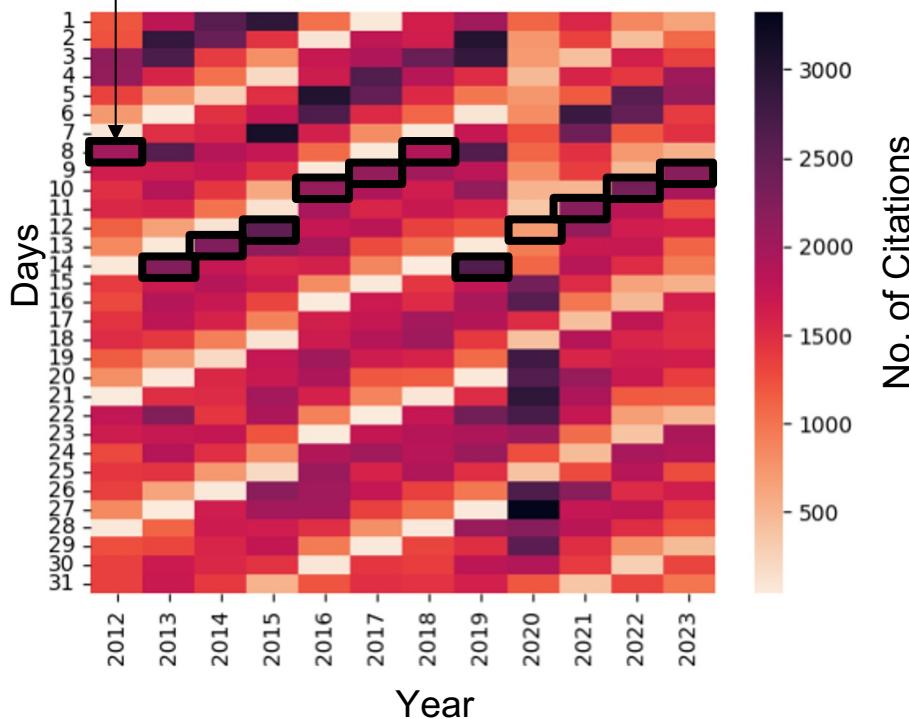
Lockdown Effect



Time Series Heatmap (October)

Columbus Day

October

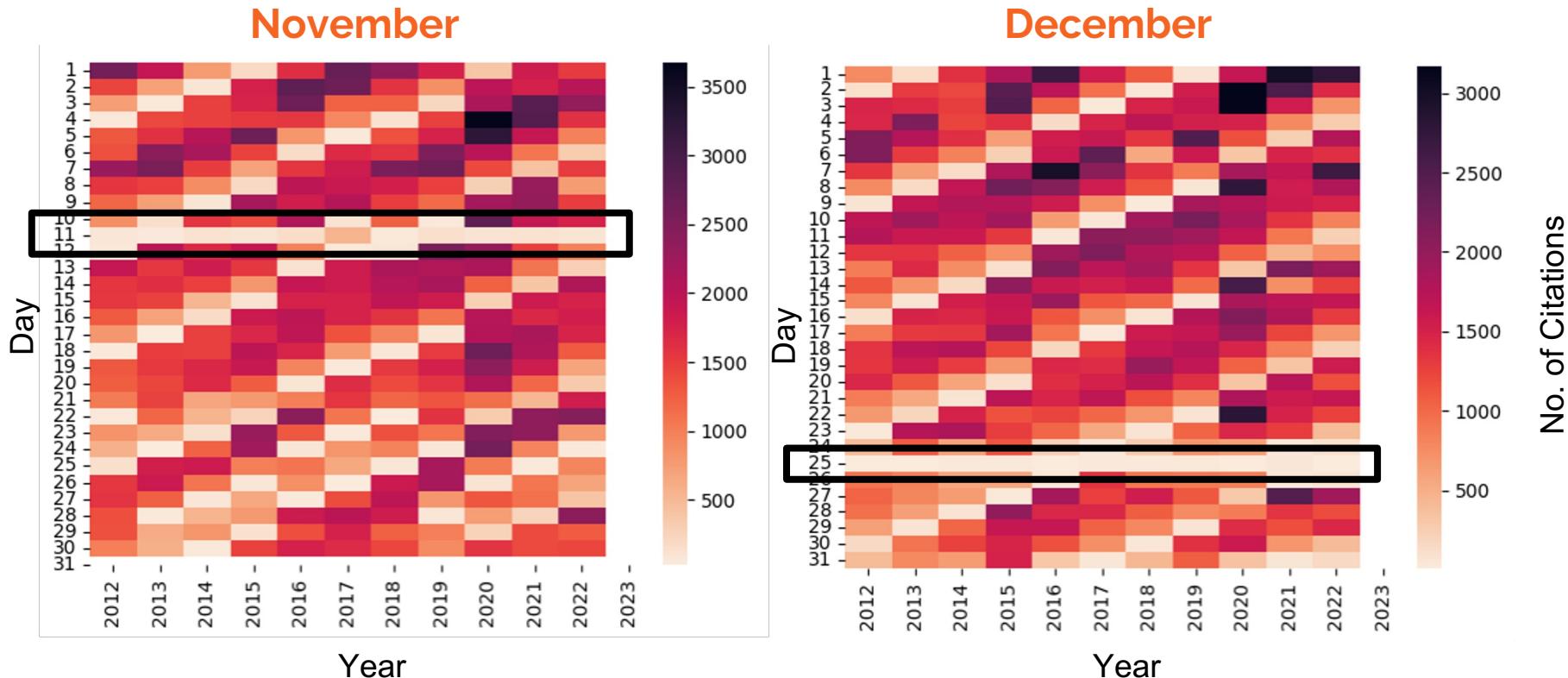


OCTOBER 2012						
SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Less parking tickets on weekends(Staircase Pattern).

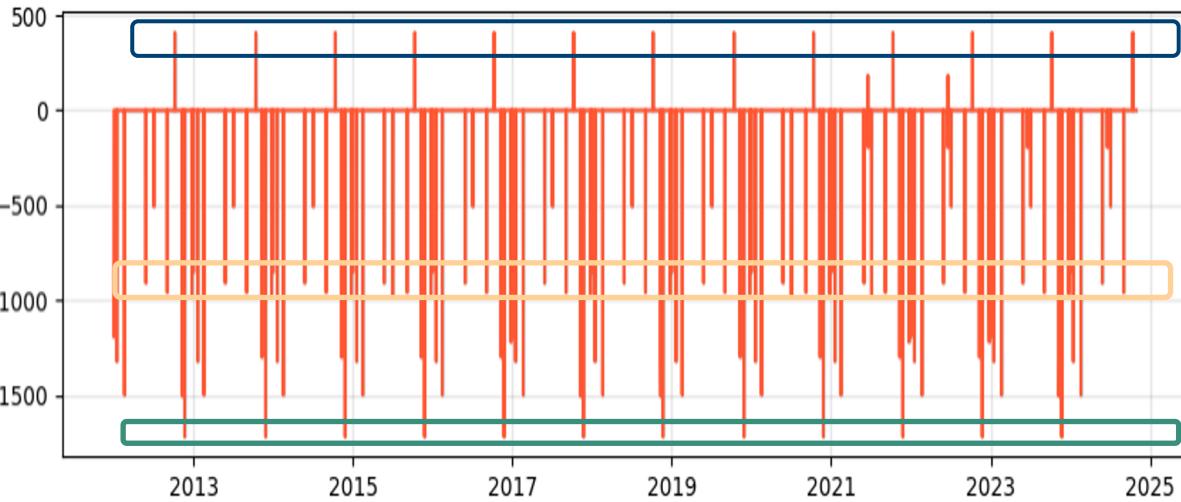
More tickets on Columbus Day except 2020

Time Series Heatmap (November/December)



Seasonal Decompose - Holidays Effect

Columbus Day FACT: The Only Holiday that is not of Parking Enforcement Holidays in SD



Hooray!
It's Thanksgiving!



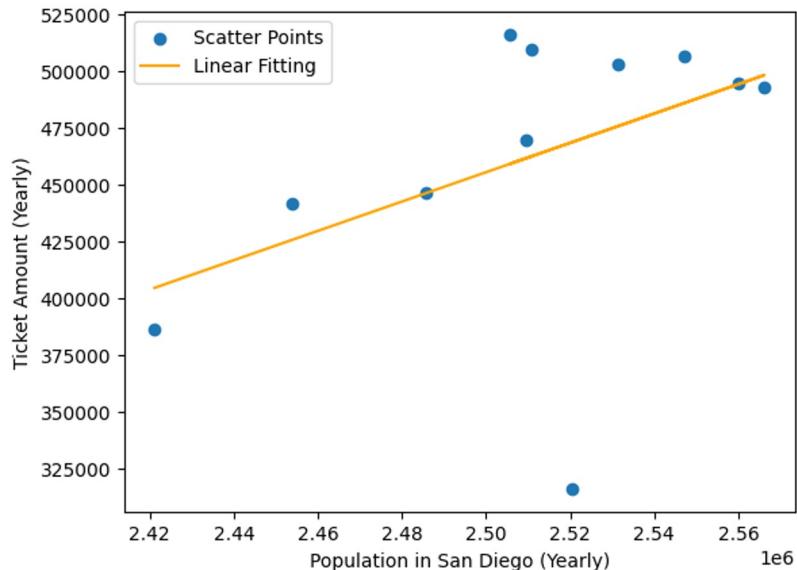
Should Santa Worry about His Sleigh?



Maybe...
We Prefer Fee Than Fine?

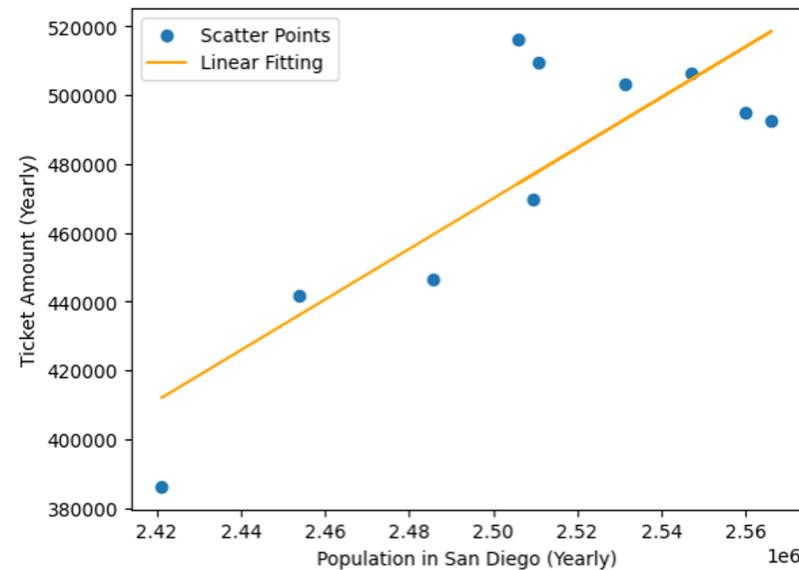
Population vs Ticket Frequency

Include 2020



P-Value: 0.15861427

Exclude 2020



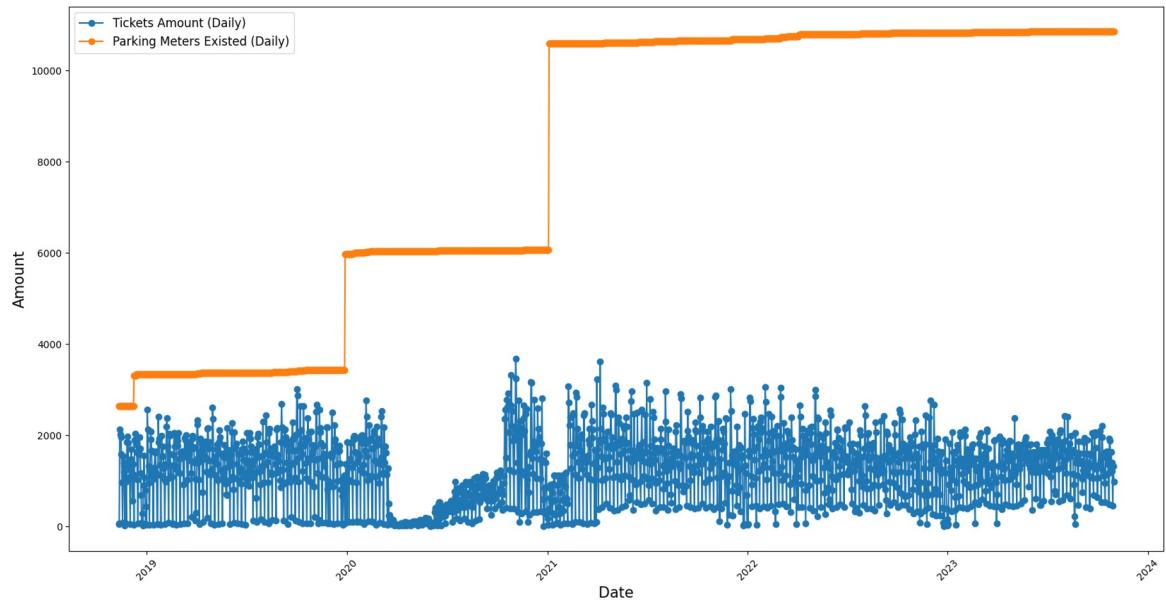
P-Value: 0.00325623

More People, More tickets

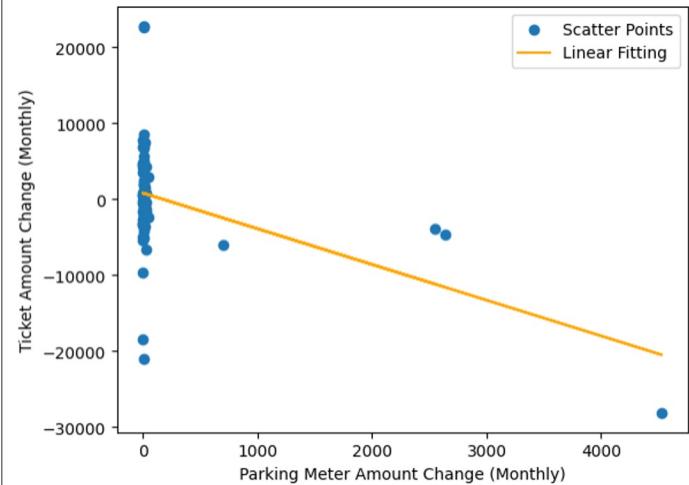


Parking Meters vs Ticket Frequency

Daily Statistics



Trend Fitting



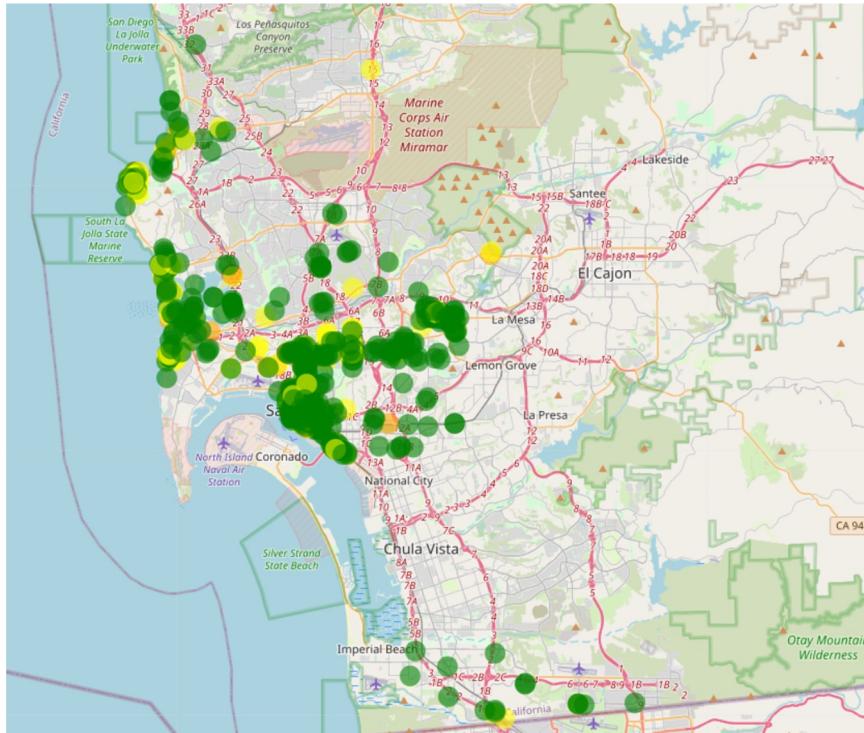
p-value: $3.26577233e-04$

More Parking Meters, Less Tickets

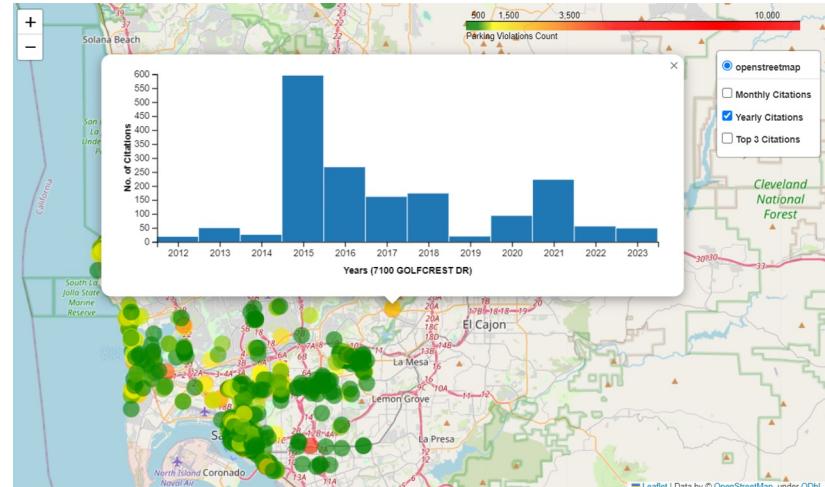
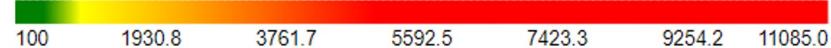


A Map is worth a Thousand
Words!

GeoSpatial Distribution: Parking Citations



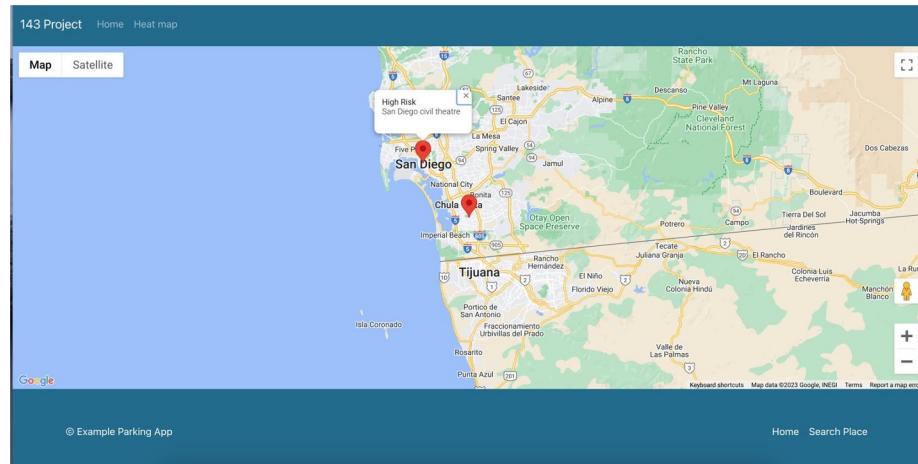
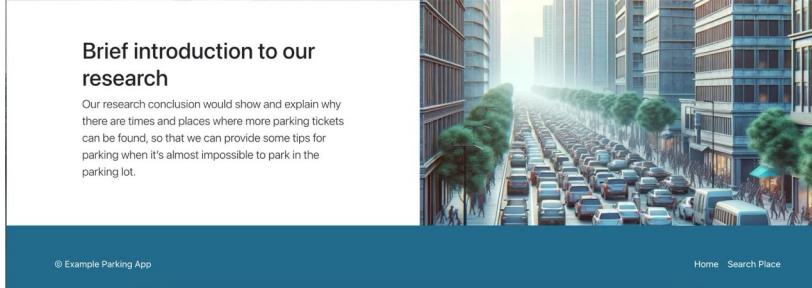
Parking Violations Count



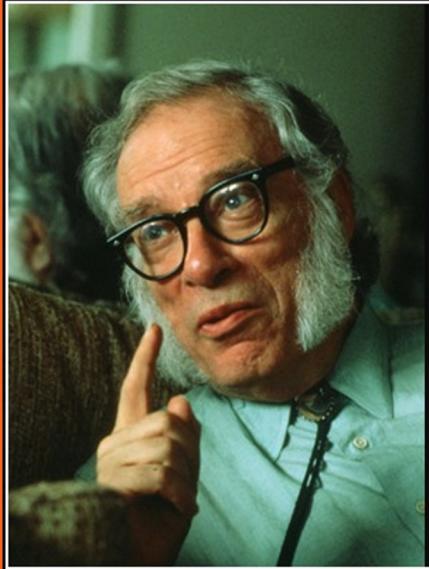
With the Google API & Folium, plotted an interactive Map to show distribution of citations across San Diego. (Demo)

Can we do something for San
Diegans?

Future Work: Web-Application



Search, the location and see is it safe to park there. :)



Life is a journey, but don't worry,
you'll find a parking spot at the end.

— Isaac Asimov —

AZ QUOTES

THANK
YOU