Traffic Collision Analysis in SF

Meet Our Team
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Questions to Consider

- What areas in SF have the highest density of collisions?
- Were there less accidents during the COVID lockdowns compared to now?
- Are fatal accidents more prevalent than non-fatal accidents?
- Are car accidents more common in densely populated areas?
- What days experience the highest frequency of accidents?

Target Audience

There are a variety of individuals who are concerned about traffic safety:

- First Responders
- Traffic Engineers
- Urban Planners
- Logistic Companies
- Insurance Companies
- Work From Home Policy Creators

Data Discovery and ETL

DATA SET: SF TRAFFIC CRASHES RESULTING IN INJURY

- This data includes all crashes resulting in an injury in the city of San Francisco
  - Dataset is updated quarterly
  - Source: SFPD/SFDPH
  - Each API call returns 1,000 records

EXTRACT

API Request

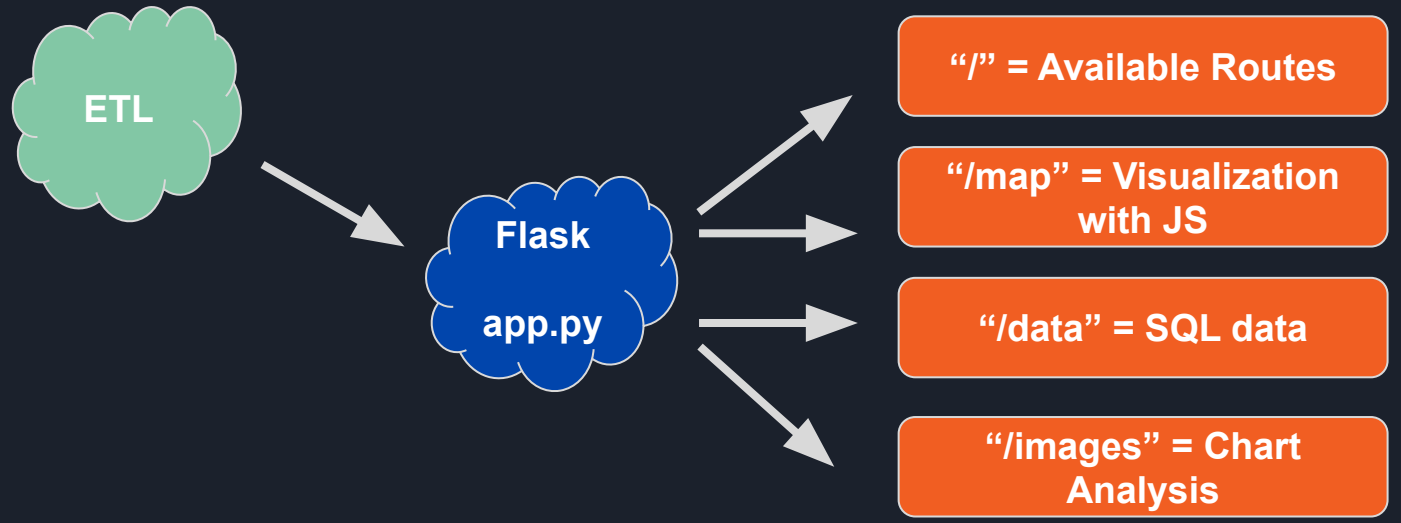
request.json to Pandas df

TRANSFORM

- Dropped rows that did not have lat/lon data or collision time
- Changed Datatypes
  - Crash Date to “datetime”
  - Crash time to “hour”
  - Injury/Fatality numbers to “int”
  - Lat/Lon to “float”
- Binned incidents based on time of day

LOAD

Saved as SQLite DB

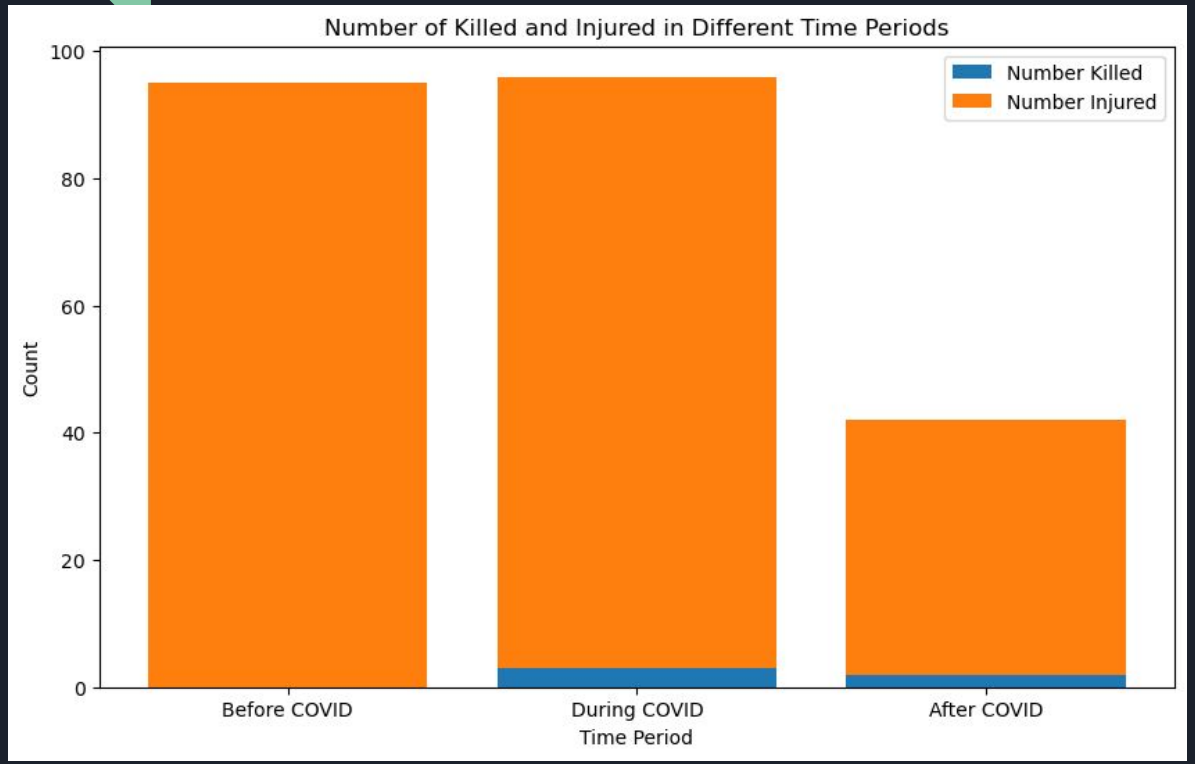


WebApp Development Process

DEMO

http://127.0.0.1:5000/

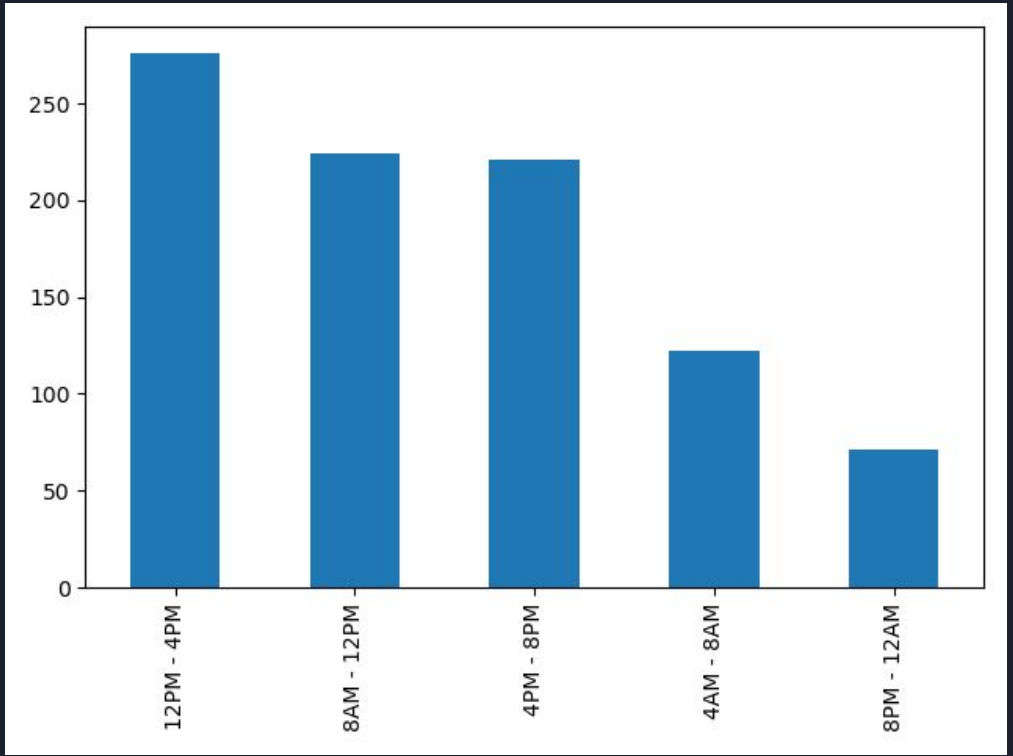
Visualization #1: Positive side effects from WFH



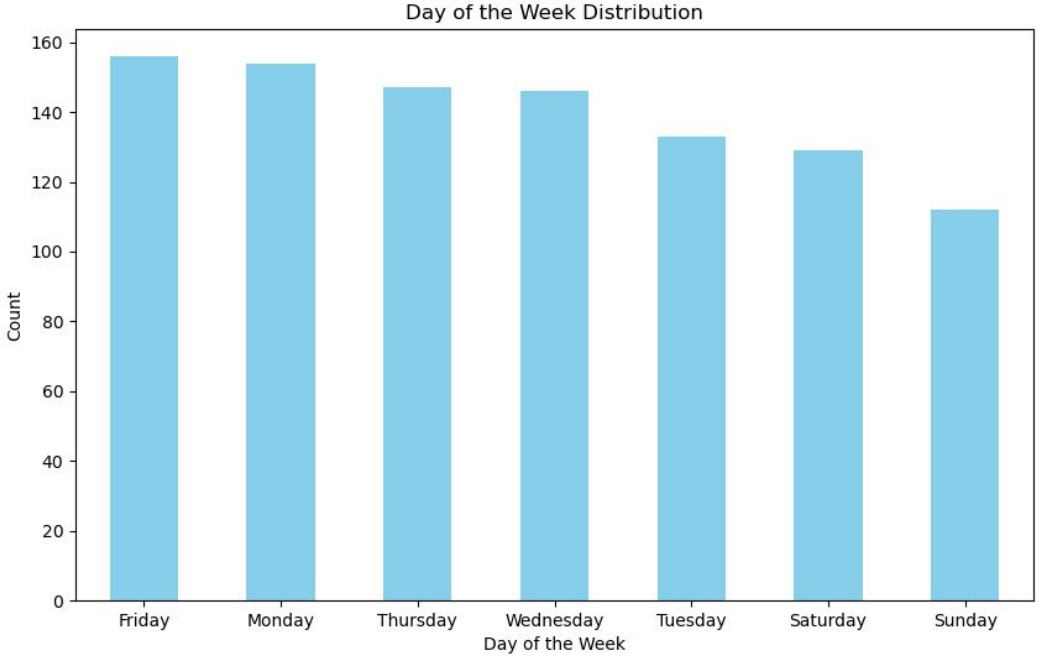
Collision Rates: A Comparative Analysis Before, During, and After the COVID-19 Pandemic

Visualization #2: Rush hour is actually... safe?

Most dangerous times to drive in SF



Visualization #3: Hooray it's Friday?



Analyze the data to discover correlations between these days and collisions.

Insights

- Most traffic accidents in San Francisco are non fatal
- There appears to be a significant difference in traffic accidents during COVID lock downs compared to post COVID lock downs
- The majority of traffic accidents occur at the end of the week and in the Downtown area
- Van Ness Avenue and Market Street have the most traffic accidents

Challenges

- Creating the pop up icons for the traffic collision map
- Wanted to show outlines of different neighborhoods on map but ran into issues (also there are A LOT of neighborhoods in SF)
- Creating the bar graphs for post covid and pre covid collision analysis

Thank you for watching! Questions?