

OPENING A FOOD TRUCK IN SAN DIEGO

Coursera Capstone project

INTRODUCTION

- San Diego is the eighth-largest city in the United States and second largest in California
- As the "New Town" – present-day Downtown – waterfront location quickly developed, it eclipsed Old Town as the center of San Diego
- Downtown San Diego has a busy nightlife with many bars, restaurants and other eateries
- However, one of the drawbacks of the downtown area is the lack of affordable food options. Most restaurants in downtown area close early and very few are open close to the late night

OPENING A LATE-NIGHT FOOD TRUCK

- A local of San Diego wanted to open a food truck in the popular area of downtown to cater to the night owls
- But before that, he wanted to understand the crime rate in the area and if having a food truck open late in the night is a safe option
- He also wanted to know the neighborhood where he could open his food truck

DATA ANALYSIS

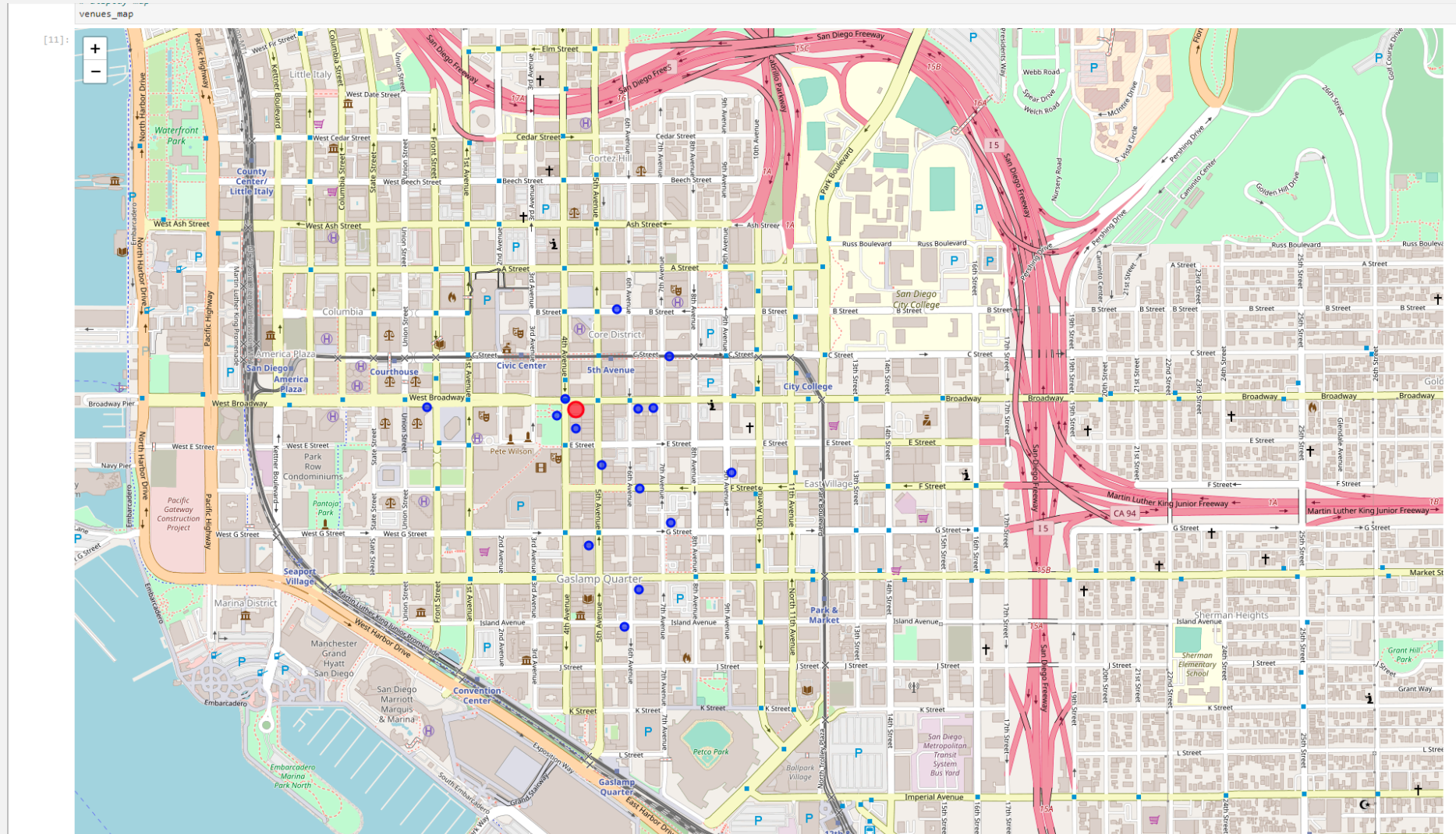
- I used Jupyter notebook for the data analysis
- San Diego crime data for 2019 was obtained from <https://www.sandiego.gov/police/services/statistics>
- I also used FourSquare API for the getting popular nightlife and food trucks in downtown San Diego

GETTING DATA FOR NIGHTLIFE IN SAN DIEGO FROM FOURSQUARE API

```
[10]: dataframe_filtered.name
```

```
[10]: 0      Fright Night Party
      1      Night And Day Vip
      2      Night Time Events
      3      Boudoir Night Club
      4      Omnia Nightclub
      5      98 Bottles/noli Nights
      6      Parq Restaurant & Nightclub
      7      Ad Nightclub
      8      Lair Nightclub
      9      Nighthawk Private Investigations
     10      sandiego2night
     11      Vanish Nightclub
     12      California Nightlife
     13      Downtown Nightlife Association
     14      Budoir Nightclub
      Name: name, dtype: object
```

BLUE DOTS ARE NIGHTLIFE SPOTS IN DOWNTOWN



GETTING FOODTRUCK VENUES FROM FOURSQUARE API

```
[206]: df_ft_filtered.name
```

```
[206]: 0      White Rabbit Food Truck
      1      Linme's Food Truck
      2      Skyrim Food Truck
      3      garlic scape Food Truck
      4      Food Shop
      5      Westfield Horton Plaza
      6      Real Steel Truck Stage
      7      Sundra Indian Food
      8      Foodfarm
      9      Lima Peruvian Food & Cocktails
     10      Code Blue Tattoo Truck
     11      ShowMe Ice Cream Truck
     12      Sabeih Food Services
     13      Mini Truck Dismantling
     14      Valentine's Mexican Restaurant
     15      Prestons Truck
     16      Park Blvd Express - Chinese Fast Food
     17      FIDM
     18      Azteca Taco Shop
     19      Michos Gourmet Mexican Tacos
      Name: name, dtype: object
```

- Omnia Nightclub is one of the famous nightclubs
- So we can get data for food trucks around Omnia nightclub using Foursquare API

OMNI NIGHTCLUB IN RED (MOST POPULAR) AND FOODTRUCKS AROUND THE AREA IN BLACK



- There are not many food truck options around Omnia and this will be a potentially good place to open up a food truck.
- We should also investigate the crime data for San Diego downtown to determine if having a food truck open very late will be safe

CRIME DATAFRAME AFTER CLEANING UP

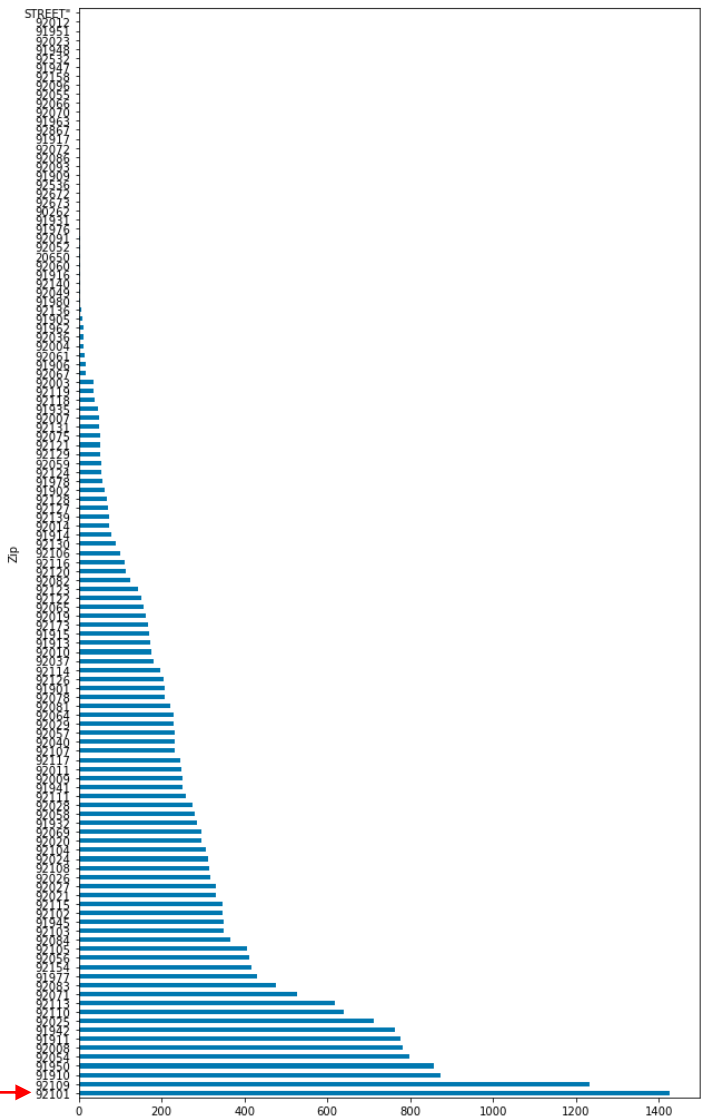
```
72]: df.head()
```

```
72]:
```

	Crime type	Place	Description	Date	Time	Address	Zip	Community
0	MOTOR VEHICLE THEFT	NATIONAL CITY	TAKE VEHICLE W/O OWNER'S CONSENT/VEHICLE THEFT...	6/18/2019	6:30:00	2400 BLOCK TIDELANDS AVENUE	91950	NATIONAL CITY
1	BURGLARY	NATIONAL CITY	BURGLARY (RESIDENTIAL) (F)	6/30/2019	9:22:00	200 E BLOCK 12TH STREET	91950	NATIONAL CITY
2	THEFT/LARCENY	NATIONAL CITY	GRAND THEFT:MONEY/LABOR/PROPERTY (F)	6/7/2019	13:38:00	2100 BLOCK HOOVER AVENUE	91950	NATIONAL CITY
3	THEFT/LARCENY	NATIONAL CITY	SHOPLIFTING (M)	7/13/2019	14:17:00	3000 BLOCK PLAZA BONITA ROAD	91950	NATIONAL CITY
4	THEFT/LARCENY	NATIONAL CITY	GRAND THEFT (Theft From Building) (F)	6/28/2019	13:15:00	1500 BLOCK PLAZA BOULEVARD	91950	NATIONAL CITY

SAN DIEGO ZIPCODE VS CRIME

<matplotlib.axes._subplots.AxesSubplot at 0x7f49728ac710>



MAKING A NEW DF FOR DOWNTOWN (ZIP 92101)

The above bar graph shows the number of crime in each zipcode. As you can see, 92101 has the highest crime rate. Let us analyse the data further

Google search shows that zipcode 92101 is San Diego Downtown

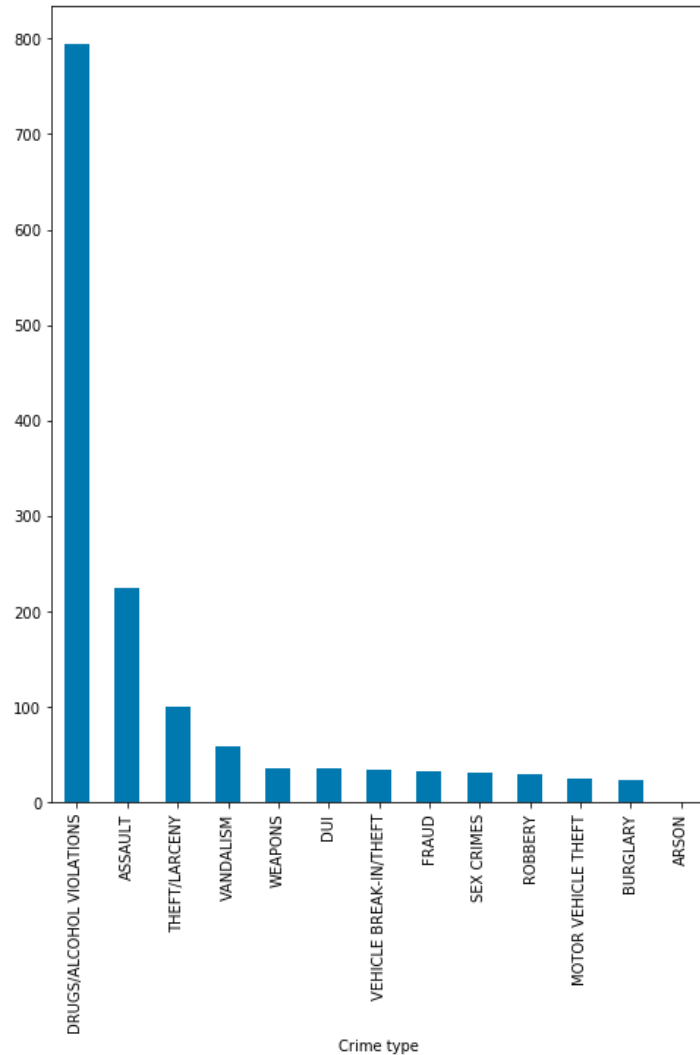
```
75]: Downtown = df.loc[df['Zip']=='92101']  
Downtown.head()
```

```
75]:
```

	Crime type	Place	Description	Date	Time	Address	Zip	Community
10	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	POSS CONTRL SUB PARAPHERNALIA	7/17/2019	7:05:00	1500 BLOCK C STREET	92101	SAN DIEGO
29	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	DRUNK IN PUBLIC: ALCOHOL, DRUGS, COMBO OR TOLU...	5/6/2019	1:15:00	400 BLOCK MARKET STREET	92101	SAN DIEGO
31	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	USE/UNDER INFL OF CONTROLLED SUBS (M)	5/5/2019	22:50:00	100 BLOCK G STREET	92101	SAN DIEGO
32	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	USE/UNDER INFL OF CONTROLLED SUBS (M)	5/6/2019	0:55:00	800 BLOCK 05TH AVENUE	92101	SAN DIEGO
33	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	DRUNK IN PUBLIC: ALCOHOL, DRUGS, COMBO OR TOLU...	5/5/2019	22:22:00	600 BLOCK 05TH AVENUE	92101	SAN DIEGO

CRIME TYPE AND NUMBER IN DOWNTOWN SD

```
[176]: <matplotlib.axes._subplots.AxesSubplot at 0x7f9b920463c8>
```



- From the graph, we can see that majority of the crimes reported in downtown area are related to Drug/alcohol violations
- The number of assaults or burglary are less overall
- However, we should also analyze the crime trend over a 24-hour period

NUMBER OF CRIME COMMITTED IN A 24-HOUR PERIOD

```
[39]: Downtown['Hours'] = pd.to_datetime(Downtown['Time'], format = '%H:%M:%S').dt.hour
```

```
/home/jupyterlab/conda/envs/python/lib/python3.6/site-packages/ipykernel_launcher.py:1: SettingWithCopyWarning:  
A value is trying to be set on a copy of a slice from a DataFrame.  
Try using .loc[row_indexer,col_indexer] = value instead  
  
See the caveats in the documentation: http://pandas.pydata.org/pandas-docs/stable/user\_guide/indexing.html#returning-a-view-versus-a-copy  
""Entry point for launching an IPython kernel.
```

```
[40]: Downtown.head()
```

```
[40]:
```

	Crime type	Place	Description	Date	Time	Address	Zip	Community	Hours
10	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	POSS CONTRL SUB PARAPHERNALIA	7/17/2019	7:05:00	1500 BLOCK C STREET	92101	SAN DIEGO	7
29	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	DRUNK IN PUBLIC: ALCOHOL, DRUGS, COMBO OR TOLU...	5/6/2019	1:15:00	400 BLOCK MARKET STREET	92101	SAN DIEGO	1
31	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	USE/UNDER INFL OF CONTROLLED SUBS (M)	5/5/2019	22:50:00	100 BLOCK G STREET	92101	SAN DIEGO	22
32	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	USE/UNDER INFL OF CONTROLLED SUBS (M)	5/6/2019	0:55:00	800 BLOCK 05TH AVENUE	92101	SAN DIEGO	0
33	DRUGS/ALCOHOL VIOLATIONS	SAN DIEGO	DRUNK IN PUBLIC: ALCOHOL, DRUGS, COMBO OR TOLU...	5/5/2019	22:22:00	600 BLOCK 05TH AVENUE	92101	SAN DIEGO	22

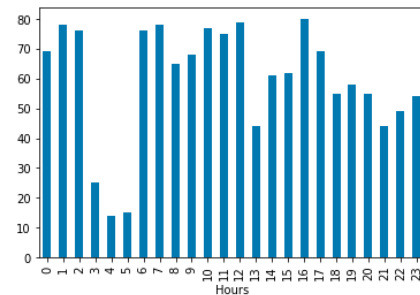
```
[41]: Downtown.shape
```

```
[41]: (1426, 9)
```

Here I have dropped minutes and seconds from my 'Time' column to plot the crime distribution over a 24 hour period

```
[43]: Downtown.groupby("Hours").size().plot(kind='bar')
```

```
[43]: <matplotlib.axes._subplots.AxesSubplot at 0x7f49723942b0>
```



CONCLUSION

- San Diego Downtown (near Omnia Nightclub) will be a potentially good spot to open a food truck that is open until early dawn.
- The number of crimes committed between 1-2am is about the same as the number of crime committed during the morning hours (6am-12pm)
- Some of the other factors our client will have to look at will be availability of space, city regulation for food trucks, etc.