Untitled4

February 25, 2021

```python
[17]: import numpy as np
      import pandas as pd
      import matplotlib.pyplot as plt
      import folium
```

```python
[18]: df_sa=pd.read_csv("Police_Department_Incidents_-_Previous_Year__2016_.csv")
      df_sa.head()
```

```
[18]:    IncidntNum      Category                                        Descript  \
      0  120058272    WEAPON LAWS                      POSS OF PROHIBITED WEAPON
      1  120058272    WEAPON LAWS  FIREARM, LOADED, IN VEHICLE, POSSESSION OR USE
      2  141059263       WARRANTS                                  WARRANT ARREST
      3  160013662   NON-CRIMINAL                                   LOST PROPERTY
      4  160002740   NON-CRIMINAL                                   LOST PROPERTY

         DayOfWeek                    Date   Time  PdDistrict      Resolution  \
      0    Friday  01/29/2016 12:00:00 AM  11:00     SOUTHERN  ARREST, BOOKED
      1    Friday  01/29/2016 12:00:00 AM  11:00     SOUTHERN  ARREST, BOOKED
      2    Monday  04/25/2016 12:00:00 AM  14:59      BAYVIEW  ARREST, BOOKED
      3   Tuesday  01/05/2016 12:00:00 AM  23:50   TENDERLOIN            NONE
      4    Friday  01/01/2016 12:00:00 AM  00:30      MISSION            NONE

                        Address           X          Y  \
      0  800 Block of BRYANT ST -122.403405  37.775421
      1  800 Block of BRYANT ST -122.403405  37.775421
      2   KEITH ST / SHAFTER AV -122.388856  37.729981
      3  JONES ST / OFARRELL ST -122.412971  37.785788
      4    16TH ST / MISSION ST -122.419672  37.765050

                               Location          PdId
      0  (37.775420706711, -122.403404791479)  12005827212120
      1  (37.775420706711, -122.403404791479)  12005827212168
      2  (37.7299809672996, -122.388856204292)  14105926363010
      3  (37.7857883766888, -122.412970537591)  16001366271000
      4  (37.7650501214668, -122.419671780296)  16000274071000
```

```
[19]: df_sa.rename(columns={'PdDistrict':'Neighborhood'},inplace=True)
      df_sa=df_sa.groupby('Neighborhood').size().reset_index(name='Count')
      df_sa
```

```
[19]:   Neighborhood  Count
      0       BAYVIEW  14303
      1       CENTRAL  17666
      2     INGLESIDE  11594
      3       MISSION  19503
      4      NORTHERN  20100
      5          PARK   8699
      6      RICHMOND   8922
      7      SOUTHERN  28445
      8       TARAVAL  11325
      9    TENDERLOIN   9942
```

```
[20]: !wget --quiet https://cocl.us/sanfran_geojson -O world_countries.json

      sanfran_geo = r'world_countries.json'
```

```
[21]: sa_map=folium.Map(location=[37.77,-122.42],zoom_start=12)
      sa_map.choropleth(
          geo_data=sanfran_geo,
          data=df_sa,
          columns=['Neighborhood', 'Count'],
          key_on='feature.properties.DISTRICT',
          fill_color='YlOrRd',
          fill_opacity=0.7,
          line_opacity=0.2,
          legend_name='Crime Rate in San Francisco'
      )


      sa_map
```

```
[21]: <folium.folium.Map at 0x7fdf6c0fc950>
```

```
[ ]:
```