```
In [1]: import pandas as pd
        import matplotlib.pyplot as plt
        import seaborn as sns
```

```
In [2]: ppg = pd.read_csv('ppg2008.csv')
        costco = pd.read_csv('costcos-geocoded.csv')
```

```
In [3]: ppg.head()
```

Out[3]:

	Name	G	MIN	PTS	FGM	FGA	FGP	FTM	FTA	FTP	...	3PA	3PP	ORB	DRB	TRB
0	Dwyane Wade	79	38.6	30.2	10.8	22.0	0.491	7.5	9.8	0.765	...	3.5	0.317	1.1	3.9	5.0
1	LeBron James	81	37.7	28.4	9.7	19.9	0.489	7.3	9.4	0.780	...	4.7	0.344	1.3	6.3	7.6
2	Kobe Bryant	82	36.2	26.8	9.8	20.9	0.467	5.9	6.9	0.856	...	4.1	0.351	1.1	4.1	5.2
3	Dirk Nowitzki	81	37.7	25.9	9.6	20.0	0.479	6.0	6.7	0.890	...	2.1	0.359	1.1	7.3	8.4
4	Danny Granger	67	36.2	25.8	8.5	19.1	0.447	6.0	6.9	0.878	...	6.7	0.404	0.7	4.4	5.1

5 rows × 21 columns
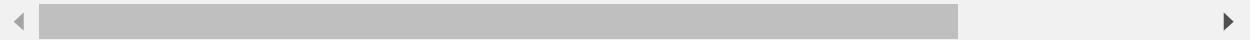
```
In [4]: costco.head()
```

Out[4]:

	Address	City	State	Zip Code	Latitude	Longitude
0	1205 N. Memorial Parkway	Huntsville	Alabama	35801-5930	34.743095	-86.600955
1	3650 Galleria Circle	Hoover	Alabama	35244-2346	33.377649	-86.812420
2	8251 Eastchase Parkway	Montgomery	Alabama	36117	32.363889	-86.150884
3	5225 Commercial Boulevard	Juneau	Alaska	99801-7210	58.359200	-134.483000
4	330 West Dimond Blvd	Anchorage	Alaska	99515-1950	61.143266	-149.884217

```
In [55]: plt.subplots(figsize= (10,8))
         sns.heatmap(ppg.corr(), vmin= -1, vmax= 1, center= 0, annot= True, fmt= '.1f', l[
         plt.suptitle('Heat Map in Python', size= 15, x =0.21)
         plt.title('Correlation Map for ppg', x= 0.11);
```

Heat Map in Python

Correlation Map for ppg
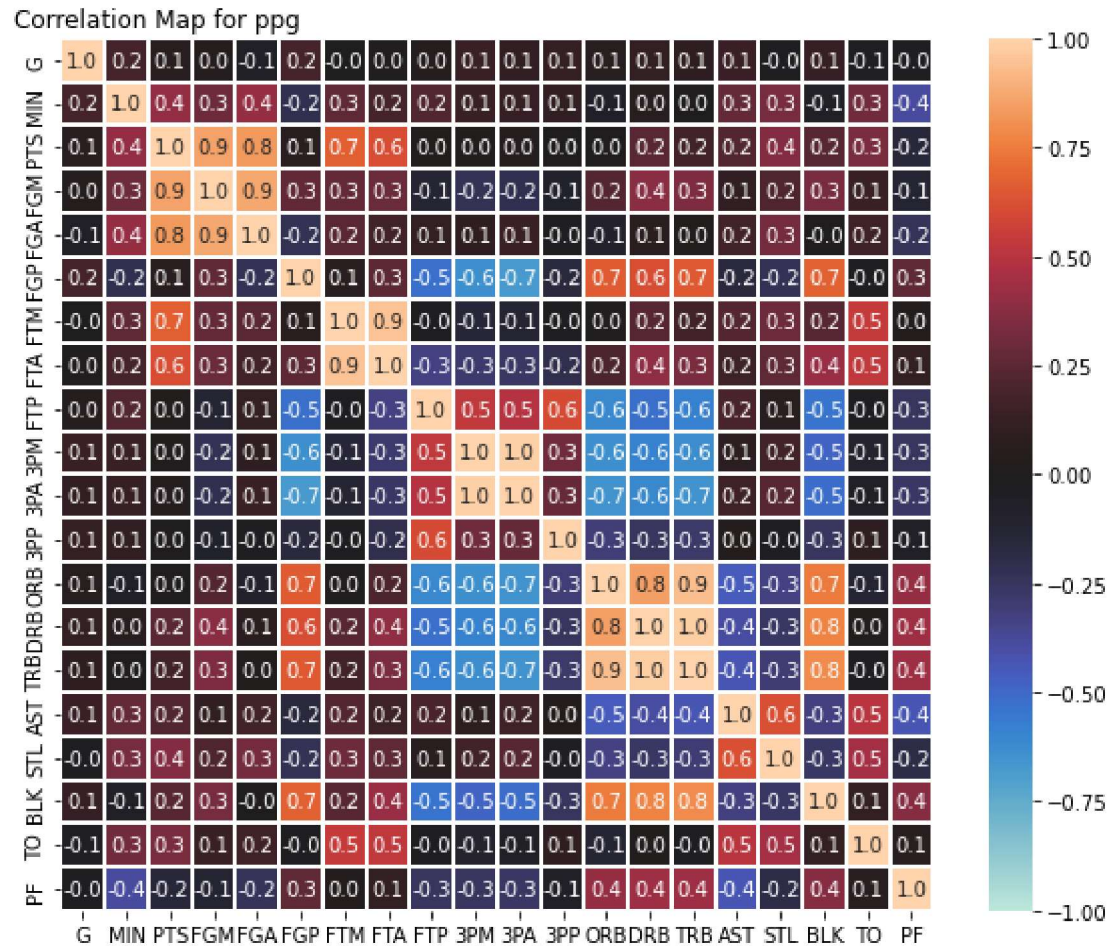

```
In [6]: import matplotlib.patches as mpatches
        import shapely.geometry as sgeom

        import cartopy.crs as ccrs
        import cartopy.io.shapereader as shpreader
```

```
In [7]: cont = costco[(costco['State'] != 'Hawaii') & (costco['State'] != 'Alaska')]
```

In [65]:
```python
fig = plt.figure()
ax = fig.add_axes([0, 0, 1, 1], projection=ccrs.LambertConformal(), frameon=False
ax.set_extent([-125, -66.5, 20, 50], ccrs.Geodetic())
shapename = 'admin_1_states_provinces_lakes'
states_shp = shpreader.natural_earth(resolution='110m', category='cultural', name
ax.add_geometries(
        shpreader.Reader(states_shp).geometries(),
        ccrs.PlateCarree(), color= 'gray', alpha= .25)
plt.scatter(
    x=costco["Longitude"],
    y=costco["Latitude"],
    color="red",
    s=4,
    alpha=.4,
    transform=ccrs.PlateCarree()
)
plt.suptitle('Spatial Chart in Python', size= 15, x= 0.2, y =1)
plt.title('Locations of Costco in USA', x= 0.19, y= .95)
plt.show()
```
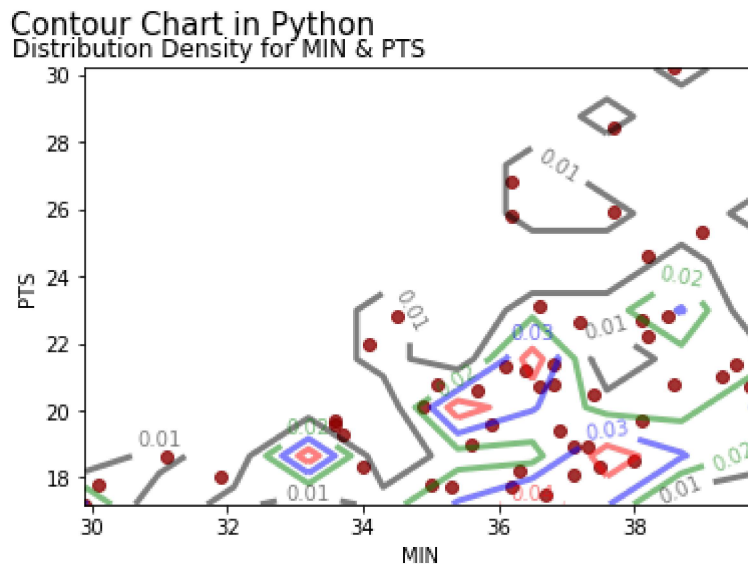
Spatial Chart in Python

Locations of Costco in USA
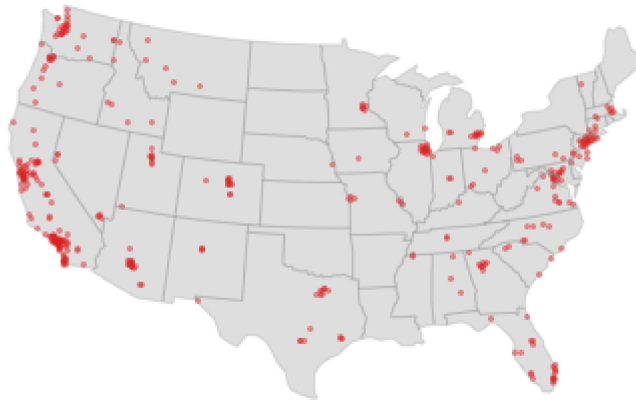
```
In [76]: import numpy as np
         from matplotlib.colors import LogNorm
         # fig = plt.figure()
         # ax = fig.add_subplot(111)
         H, xedges, yedges = np.histogram2d(ppg['MIN'], ppg['PTS'], bins=10,normed=LogNorm
         # extent = [yedges[0], yedges[-1], xedges[0], xedges[-1]]
         # fig.subplots_adjust(bottom=0.15, left=0.15)
         levels = (1.0e-2, 2.0e-2, 3.0e-2, 4.0e-2)
         cset = plt.contour(H.transpose(),levels, extent=[xedges.min(),xedges.max(),
             yedges.min(),yedges.max()],linewidths=3,colors=['black','green','blue','red']
             linestyles='solid', alpha = .5)
         plt.clabel(cset, inline=1, fontsize=10, fmt='%.2f')
         for c in cset.collections:
             c.set_linestyle('solid')
         # plt.contour(H.transpose(),extent=[xedges.min(),xedges.max(),
         #     yedges.min(),yedges.max()],linewidths=3,colors='black',
         #     linestyles='solid')
         plt.scatter(ppg['MIN'], ppg['PTS'],  color= 'darkred', alpha= .8)
         plt.suptitle('Contour Chart in Python', size= 15, x= 0.25)
         plt.title('Distribution Density for MIN & PTS', x= 0.2)
         plt.xlabel('MIN')
         plt.ylabel('PTS');
```


In [ ]: