Heat Map#2: Measure for Names

Name	MIN	G	FTP	FTM	FTA	AST
Al Harrington	34.90	73	0.79	3.20	4.00	1.40
Al Jefferson	36.60	50	0.74	3.70	5.00	1.60
Allen Iverson	36.70	57	0.78	4.80	6.10	5.00
Amare Stoudemire	36.80	53	0.84	6.10	7.30	2.00
Andre Iguodala	39.80	82	0.72	4.60	6.40	5.30
Antawn Jamison	38.20	81	0.75	4.20	5.60	1.90
Ben Gordon	36.60	82	0.86	4.00	4.70	3.40
Brandon Roy	37.20	78	0.82	5.30	6.50	5.10
Carmelo Anthony	34.50	66	0.79	5.60	7.10	3.40
Caron Butler	38.60	67	0.86	5.10	6.00	4.30
Chauncey Billups	35.30	79	0.91	5.30	5.80	6.40
Chris Bosh	38.10	77	0.82	6.50	8.00	2.50
Chris Paul	38.50	78	0.87	5.80	6.70	11.00
Corey Maggette	31.10	51	0.82	6.70	8.10	1.80
Danny Granger	36.20	67	0.88	6.00	6.90	2.70
David West	39.30	76	0.88	4.80	5.50	2.30
Deron Williams	36.90	68	0.85	4.80	5.60	10.70

Table Heatmap using custom visual

FTM
FTA
FGP
FGM
FGA
3PP
3PM
3PA
AST
BLK
DRB

0.00   4.40   8.80   13.20   17.60   22.00

Heat Map   Spatial Chart   Contour Chart

Table Heatmap using custom visual

Heat Map#2: Measure for Names

Name ▲	MIN	G	FTP	FTM	FTA	AST
Al Harrington	34.90	73	0.79	3.20	4.00	1.40
Al Jefferson	36.60	50	0.74	3.70	5.00	1.60
Allen Iverson	36.70	57	0.78	4.80	6.10	5.00
Amare Stoudemire	36.80	53	0.84	6.10	7.30	2.00
Andre Iguodala	39.80	82	0.72	4.60	6.40	5.30
Antawn Jamison	38.20	81	0.75	4.20	5.60	1.90
Ben Gordon	36.60	82	0.86	4.00	4.70	3.40
Brandon Roy	37.20	78	0.82	5.30	6.50	5.10
Carmelo Anthony	34.50	66	0.79	5.60	7.10	3.40
Caron Butler	38.60	67	0.86	5.10	6.00	4.30
Chauncey Billups	35.30	79	0.91	5.30	5.80	6.40
Chris Bosh	38.10	77	0.82	6.50	8.00	2.50
Chris Paul	38.50	78	0.87	5.80	6.70	11.00
Corey Maggette	31.10	51	0.82	6.70	8.10	1.80
Danny Granger	36.20	67	0.88	6.00	6.90	2.70
David West	39.30	76	0.88	4.80	5.50	2.30

StoreCount by State: Spatial Heatmap

StoreCount by State: Shape Map
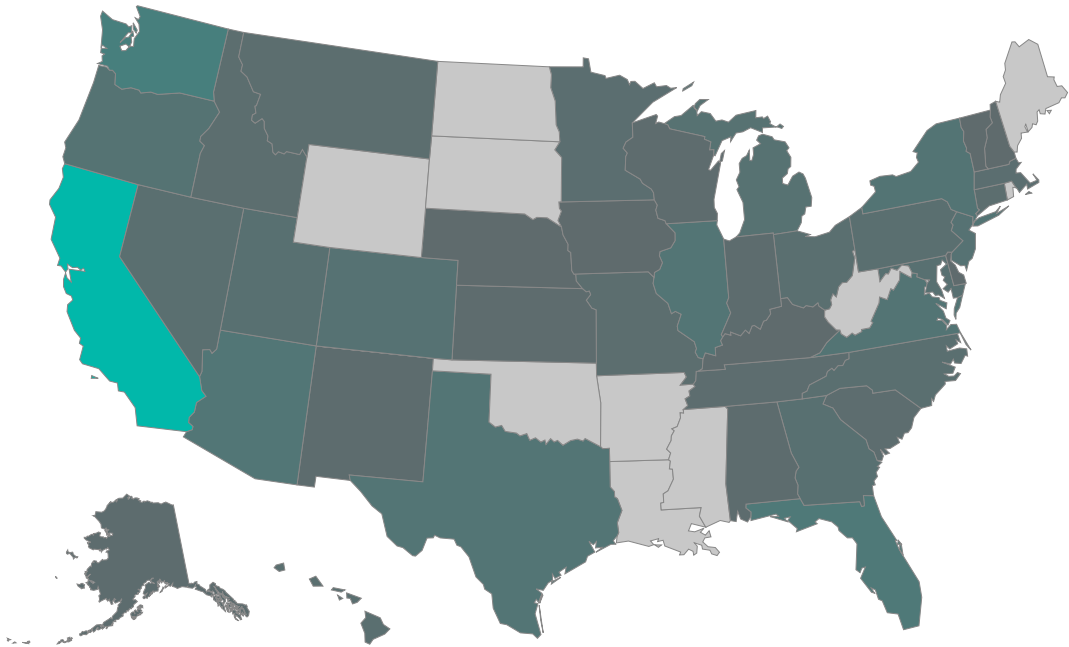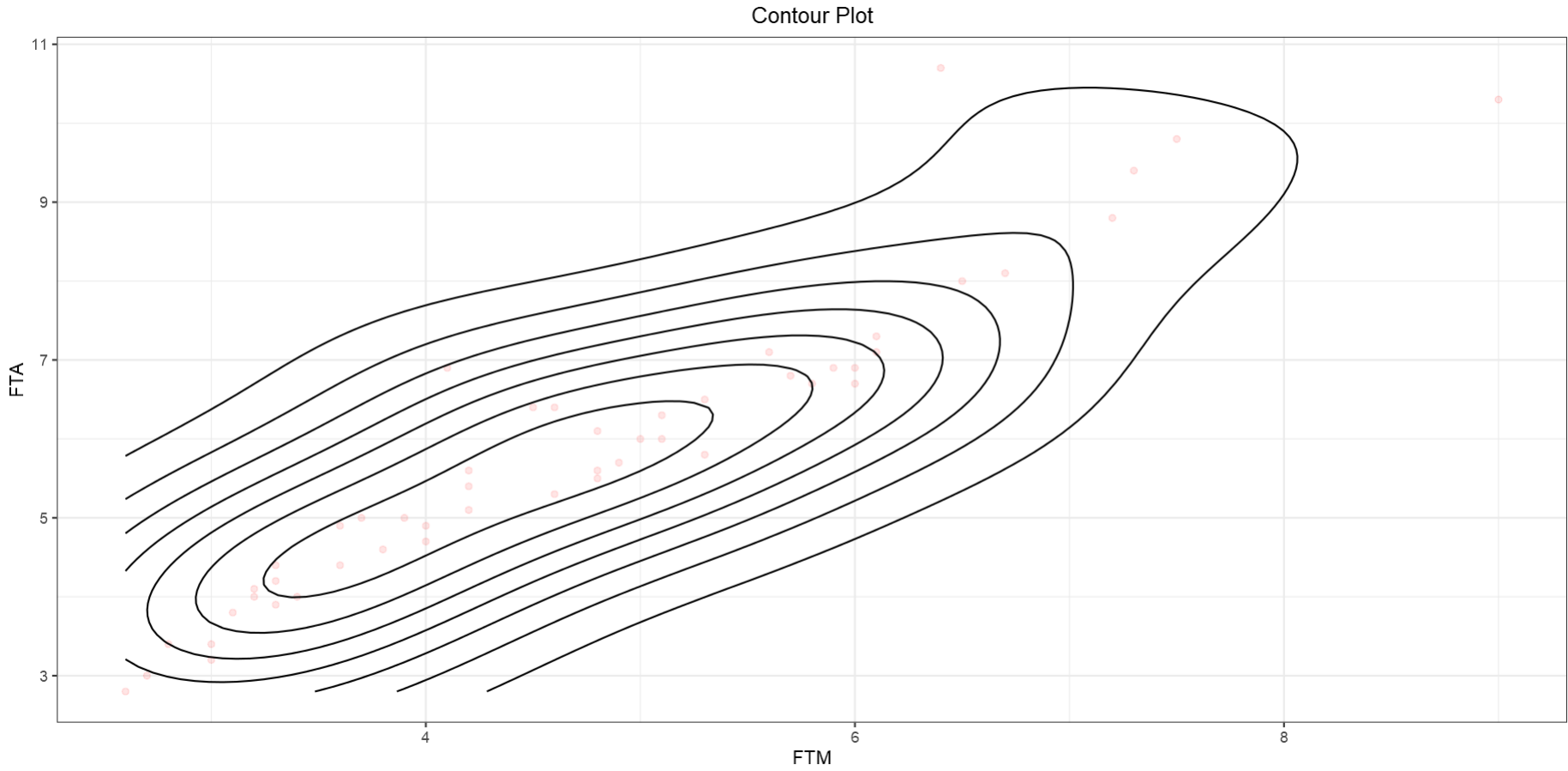
Contour Plot

Since no custom visual for contour plot in Power BI could be found, R scripting visualization has been used for the same.

You need to submit 3 heat maps, 3 spatial charts and 3 contour charts using Tableau or PowerBI, Python and R using the data below (or your own datasets). You can also use D3. You can choose which library to use in Python or R, documentation is provided to help you decide and as you start to play around in the libraries, you will decide which you prefer.

Libraries

In [1]:
```python
# Import libraries
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib as mpl
import numpy as np
import chart_studio.plotly as py
import cufflinks as cf
import seaborn as sns
import plotly.offline as plo
```

Data read

In [2]:
```python
# Read world population data
dirData = 'ex5-2/'
f_costco = 'costcos-geocoded.csv'
f_ppg = 'ppg2008.csv'

dir_costco = dirData+f_costco
dir_ppg = dirData+f_ppg

costco = pd.read_csv(dir_costco)
ppg = pd.read_csv(dir_ppg)

# summarize statewide Costco store count

costco_sum = pd.Series.to_frame(costco.groupby('State')['Address'].count())
costco_sum = costco_sum.rename({'Address':'store_count'}, axis=1, inplace=False)
costco_sum = pd.DataFrame(costco_sum.to_records())
```
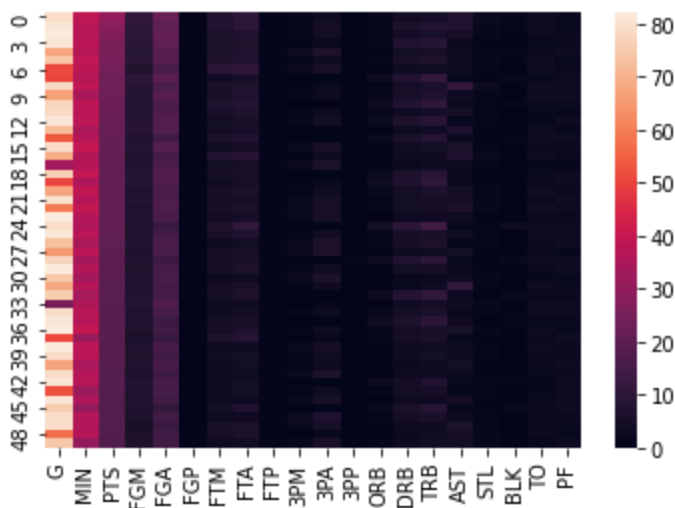
Heat Map

In [3]:
```python
sns.heatmap(ppg.iloc[:,1:])
```

Out[3]: <AxesSubplot:>

Spatial Plot

```python
# plot the costco store count across US states

data=[dict(type='choropleth', autocolorscale = False,
           locations=costco_sum['State'], z=costco_sum['store_count'],
           locationmode='USA-states', colorscale='YlOrRd',
           colorbar=dict(title='Store Count'))]

layout = dict(title='Costco Store Count',
              geo=dict(scope='usa', projection=dict(type='albers usa'),
                       showlakes=True, lakecolor='rgb(66,165,245)'))

fig=dict(data=data, layout=layout)

plo.plot(fig)
```

'temp-plot.html'

Countour plot

```python
%matplotlib inline

# define function

def f(x, y):
    """
    Args:
        two numpy arrays (x, y)
    Returns:
        square root of sum of square of x and y
    """
    return np.sqrt(x**2 + y**2)

x = np.array(ppg['FTM'])
y = np.array(ppg['FTA'])

X, Y = np.meshgrid(x, y)
Z = f(X, Y)

plt.figure()
cp = plt.contour(X, Y, Z)
plt.clabel(cp, inline=True,
           fontsize=10)
plt.title('Contour Plot')
plt.xlabel('FTM')
plt.ylabel('FTA')
plt.show()
```
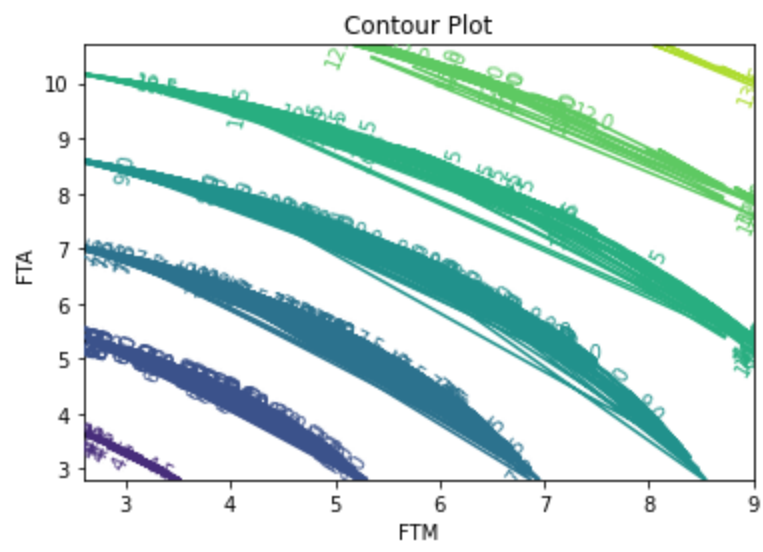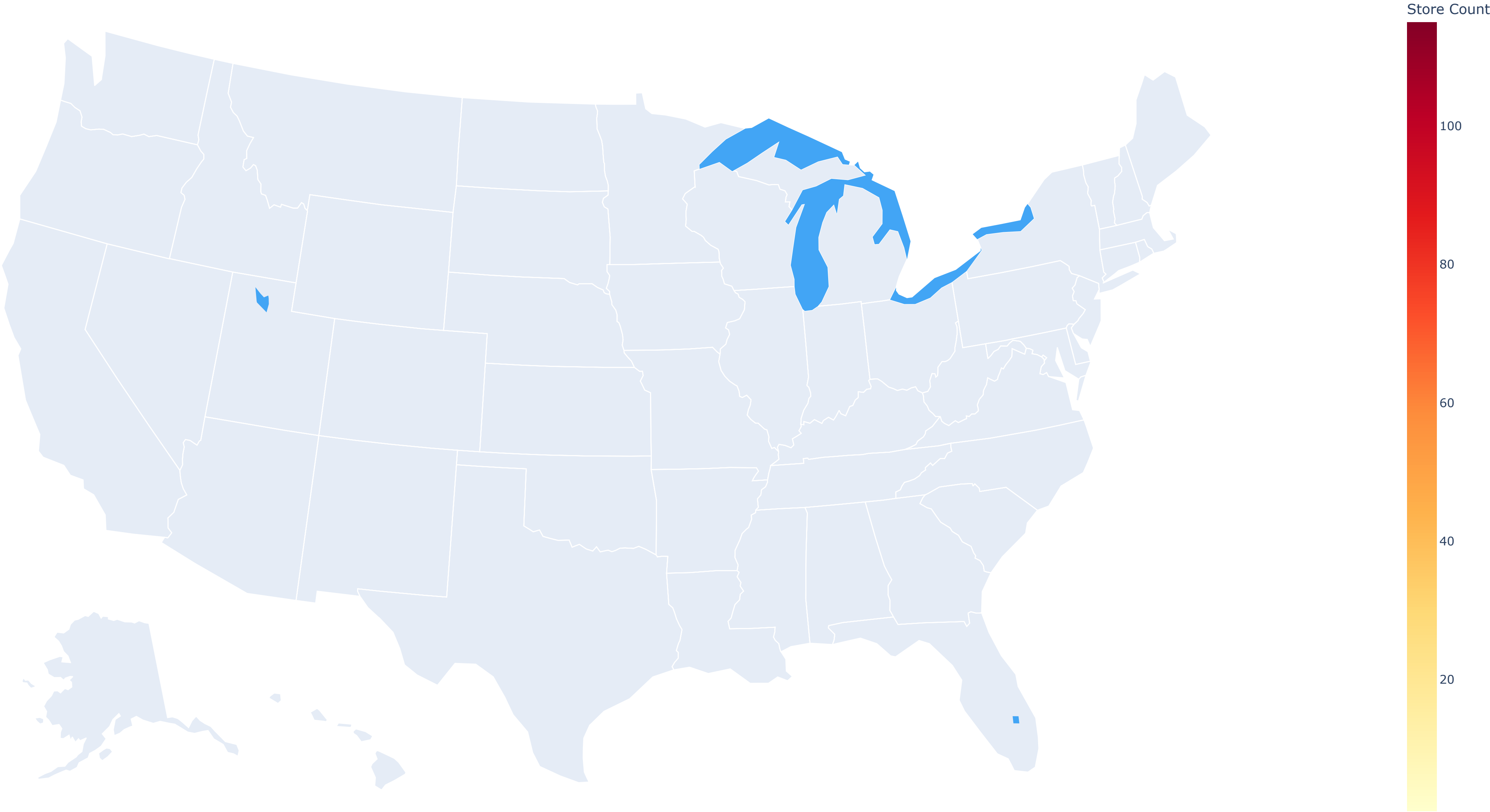
Contour Plot

End of code

Costco Store Count

Assignment 5.2

Veera Koppula

05/18/2022

You need to submit 3 heat maps, 3 spatial charts and 3 contour charts using Tableau or PowerBI, Python and R using the data below (or your own datasets). You can also use D3. You can choose which library to use in Python or R, documentation is provided to help you decide and as you start to play around in the libraries, you will decide which you prefer.
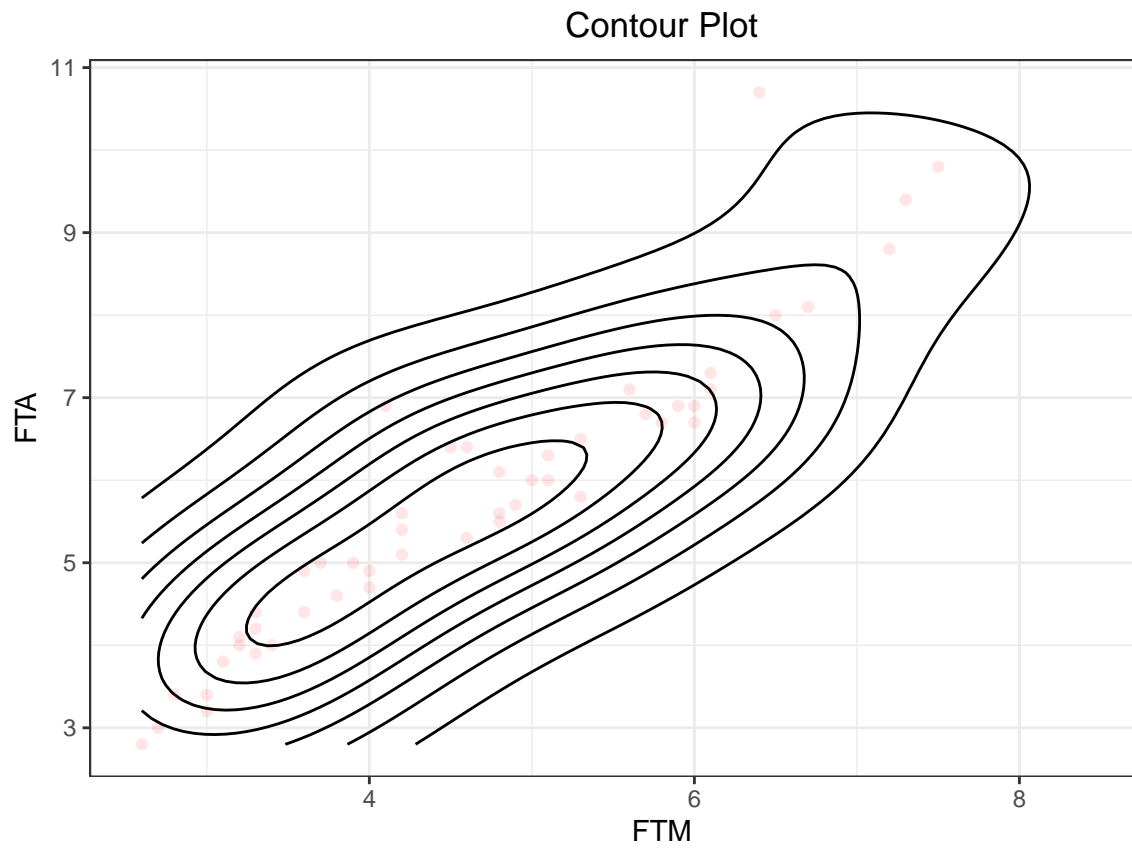
```
## Loading required package: ggplot2
```

```
## Google's Terms of Service: https://cloud.google.com/maps-platform/terms/.
```

```
## Please cite ggmap if you use it! See citation("ggmap") for details.
```

```
##
## Attaching package: 'ggmap'
```

```
## The following object is masked from 'package:magrittr':
##
##     inset
```

Plot1: Heat Map
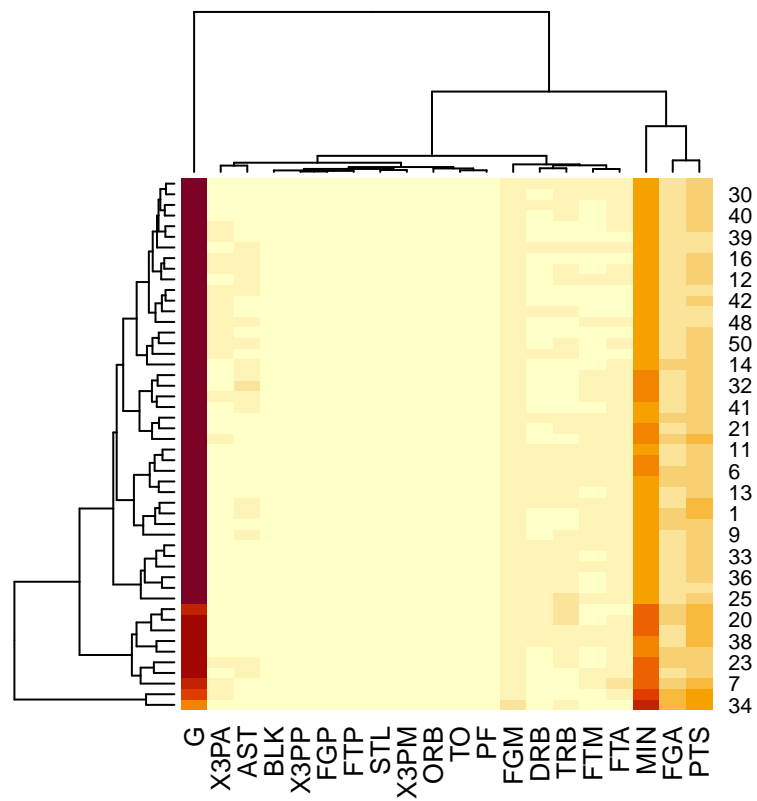
Plot2: Spatial Chart

```
## Warning: Ignoring unknown parameters: lines
```

Number of Costco Stores (2015)

90

60

30

Contour Plot

Plot3: Contour Plot