Python Plots

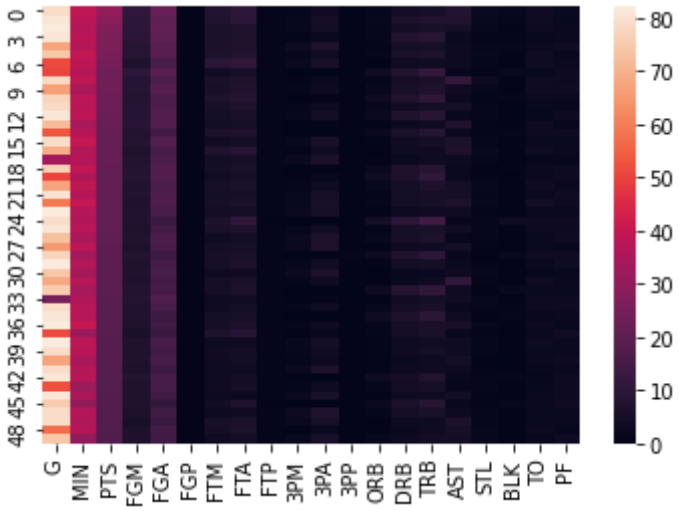
In [1]:
```
#libraries
import pandas as pd
import matplotlib.pyplot as plt
import matplotlib as mpl
import numpy as np
import chart_studio.plotly as py
import cufflinks as cf
import seaborn as sns
import plotly.offline as plo
```

In [2]:
```
#read CSV files
costco = pd.read_csv("costcos-geocoded.csv")
ppg = pd.read_csv("ppg2008.csv")

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

Python - Heat Map

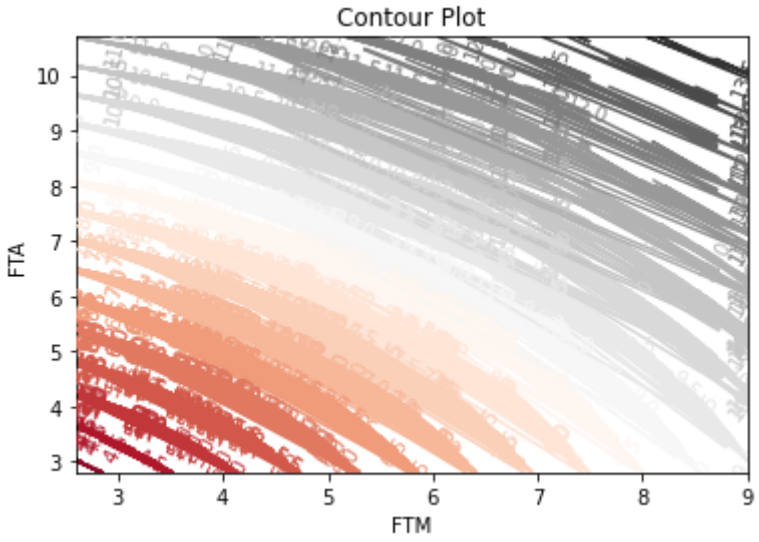
In [3]:
```
sns.heatmap(ppg.iloc[:,1:])
```

Out[3]: <AxesSubplot:>



Python - Contour chart

In [4]:
```
%matplotlib inline

def f(x, 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, 20, cmap='RdGy')
plt.clabel(cp, inline=True,
           fontsize=10)
plt.title('Contour Plot')
plt.xlabel('FTM')
plt.ylabel('FTA')
plt.show()
```



Python - Spatial Plot

In [5]:
```
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='Python-Spatial Plot',
              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)
```

Out[5]:
```
'temp-plot.html'
```

Python-Spatial Plot

R Plots

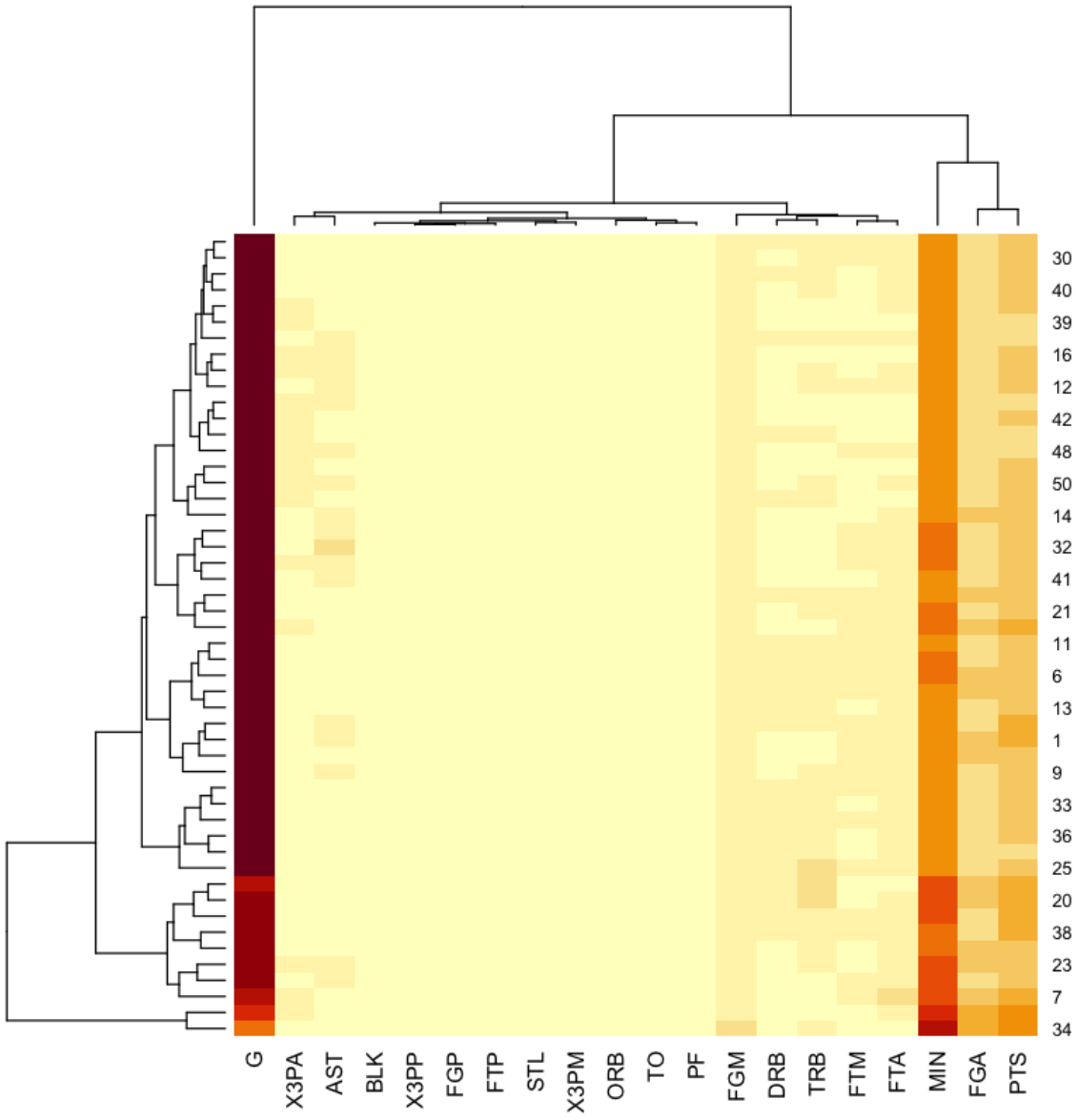
In [1]:
```
library('magrittr')
library('ggmap')
library('ggplot2')
library('usmap')
```

```
Warning message:
“package ‘ggmap’ was built under R version 3.6.3”Loading required packag
e: ggplot2
Registered S3 methods overwritten by 'ggplot2':
  method         from
  [.quosures     rlang
  c.quosures     rlang
  print.quosures rlang
Google's Terms of Service: https://cloud.google.com/maps-platform/terms/.
(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
```

In [2]:
```
costco <- read.csv('costcos-geocoded.csv')
ppg <- read.csv('ppg2008.csv')
costco_sum <- costco %>%
  dplyr::mutate(state = State) %>%
  dplyr::group_by(state) %>%
  dplyr::summarise(store_count = dplyr::n())
```

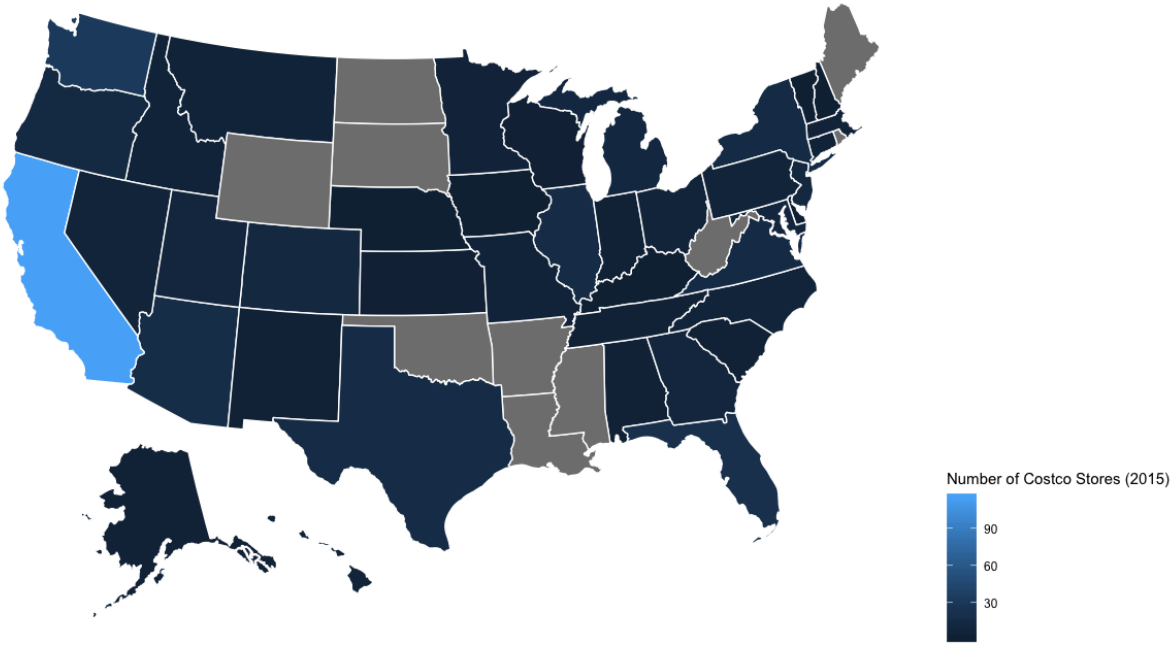
R- Heat Map

In [3]:
```
# options(repr.plot.width = 10, repr.plot.height = 7)
heatmap(as.matrix(ppg[,2:ncol(ppg)]))
```



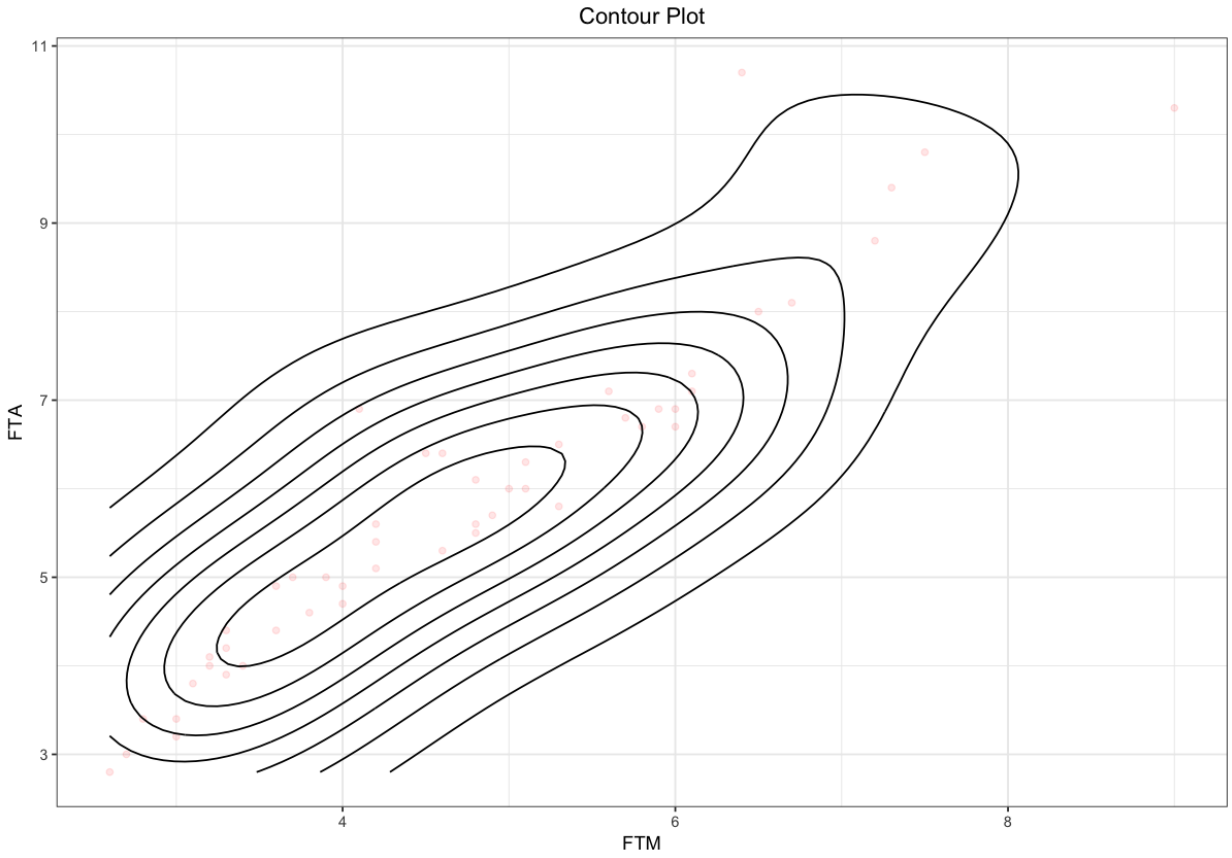
R - Spatial Chart

In [4]:
```
options(repr.plot.width = 10, repr.plot.height = 7)

plot_usmap(data = costco_sum, values = "store_count", lines = "white") +
  scale_fill_continuous(name = "Number of Costco Stores (2015)", label = sc
  theme(legend.position = "right")
```

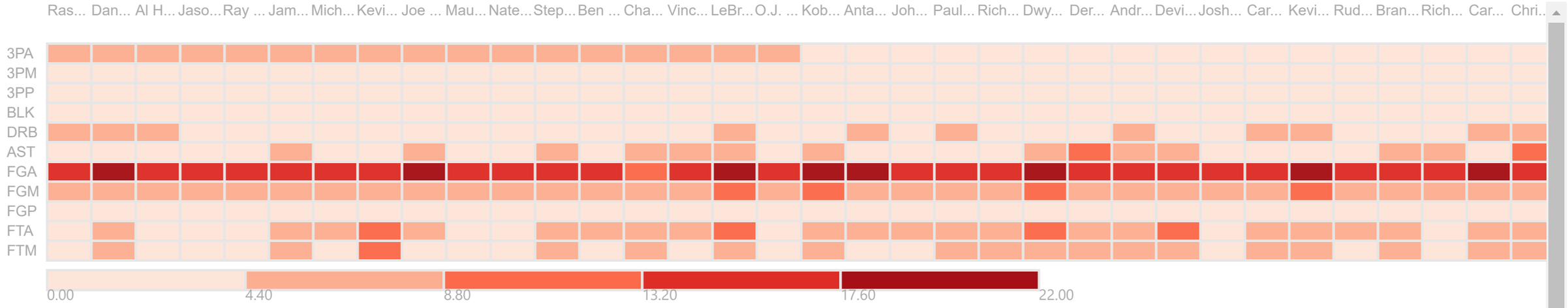


R - Contour plot

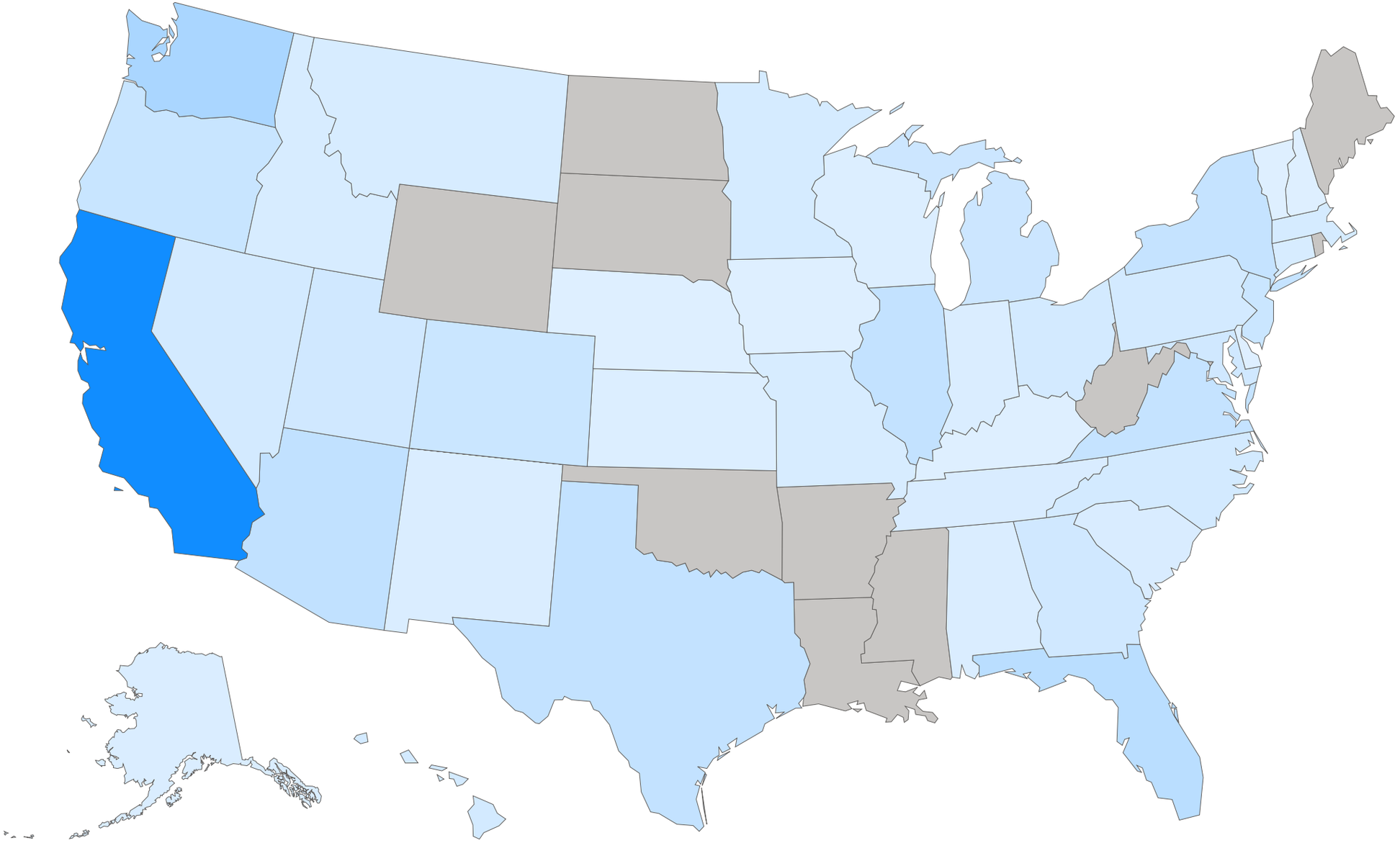
In [5]:
```
options(repr.plot.width = 10, repr.plot.height = 7)
ggplot(ppg, aes(x=FTM, y=FTA))+
  theme_bw()+
  geom_point(alpha=0.1, col='red')+
  geom_density2d(color='black')+
  ggtitle('Contour Plot')+
  theme(plot.title = element_text(hjust = 0.5))+
  labs(x='FTM', y='FTA')
```



PowerBI-HeatMap



PowerBI-SpatialChart-StoreCount by State



PowerBI-Funnel Map