DSC640 Week 7-8 Assignment

Assignment: 4.2

Name: Madhuri Basava

Date: 7/24/2024

Charts in Python

```
# Import the necessary libraries
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Ignore warningsB
import warnings
warnings.filterwarnings('ignore')

# Set the style of matplotlib
%matplotlib inline
```

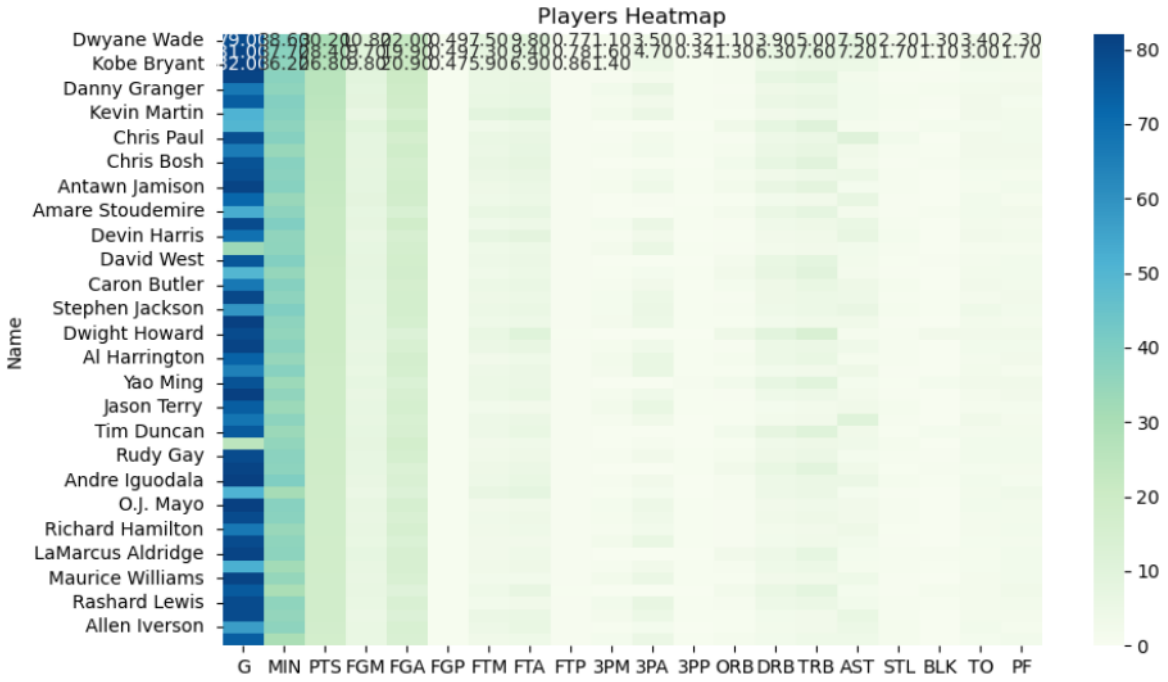
```
# Load the players dataset into the data frame
ppg_df = pd.read_csv('ppg2008.csv')
ppg_df.head(10)
```

	Name	G	MIN	PTS	FGM	FGA	FGP	FTM	FTA	FTP	...	3PA	3PP	ORB	DRB	TRB	AST	STL	BLK	TO	PF
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	7.5	2.2	1.3	3.4	2.3
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	7.2	1.7	1.1	3.0	1.7
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	4.9	1.5	0.5	2.6	2.3
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	2.4	0.8	0.8	1.9	2.2
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	2.7	1.0	1.4	2.5	3.1
5	Kevin Durant	74	39.0	25.3	8.9	18.8	0.476	6.1	7.1	0.863	...	3.1	0.422	1.0	5.5	6.5	2.8	1.3	0.7	3.0	1.8
6	Kevin Martin	51	38.2	24.6	6.7	15.9	0.420	9.0	10.3	0.867	...	5.4	0.415	0.6	3.0	3.6	2.7	1.2	0.2	2.9	2.3
7	Al Jefferson	50	36.6	23.1	9.7	19.5	0.497	3.7	5.0	0.738	...	0.1	0.000	3.4	7.5	11.0	1.6	0.8	1.7	1.8	2.8
8	Chris Paul	78	38.5	22.8	8.1	16.1	0.503	5.8	6.7	0.868	...	2.3	0.364	0.9	4.7	5.5	11.0	2.8	0.1	3.0	2.7
9	Carmelo Anthony	66	34.5	22.8	8.1	18.3	0.443	5.6	7.1	0.793	...	2.6	0.371	1.6	5.2	6.8	3.4	1.1	0.4	3.0	3.0

10 rows × 21 columns

Python -Heatmap:

```python
# Create Heat Map

# Trim whitespace from column names
ppg_df.columns = ppg_df.columns.str.strip()

# set `NAME` column as index in the dataframe
ppg_df.set_index('Name', inplace=True)

# Create the heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(ppg_df, annot=True, fmt=".2f", cmap="GnBu")

# Rotate y-axis labels for better readability
plt.yticks(rotation=0)

# Set title
plt.title('Players Heatmap')

# Show plot
plt.show()
```



Python - Spatial chart

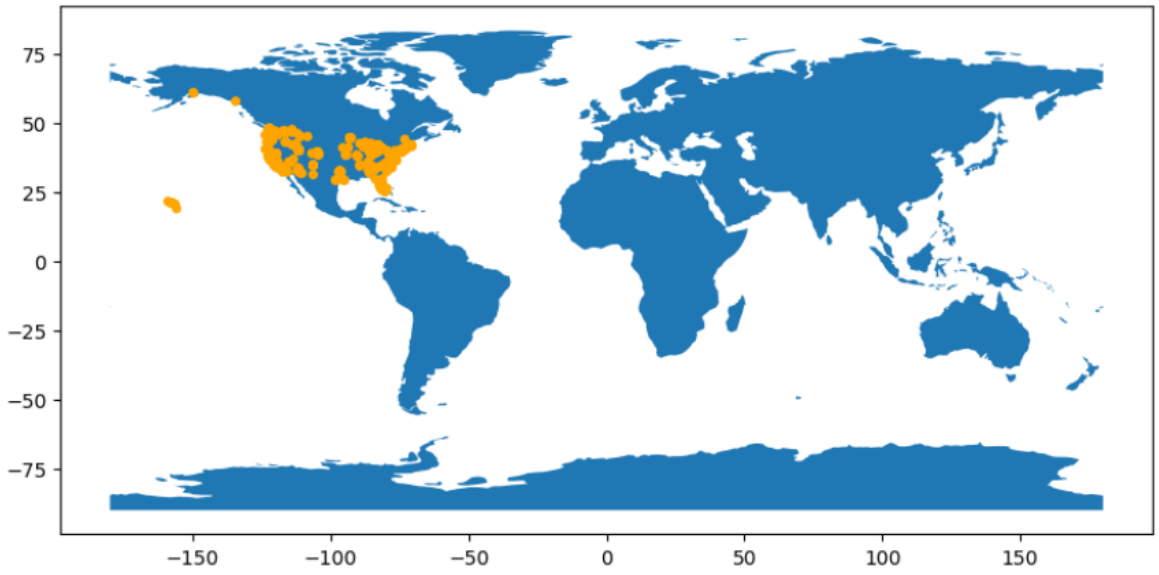
```
#Load the costco geocoded dataset into a Pandas data frame.
geocoded_df=pd.read_csv("costcos-geocoded.csv")
geocoded_df
```

:

	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
...	...	...	...	...	...	...
412	19610 SE 1st St	Vancouver	Washington	98607	45.621299	-122.459135
413	10990 Harbor Hill Dr	Gig Harbor	Washington	98335	47.357748	-122.603888
414	27520 Covington Way SE	Covington	Washington	98042	47.354838	-122.121185
415	2150 Deming Way	Middleton	Wisconsin	53562-5507	43.100195	-89.522751
416	950 Port Washington Rd	Grafton	Wisconsin	53024-9201	43.324691	-87.921615

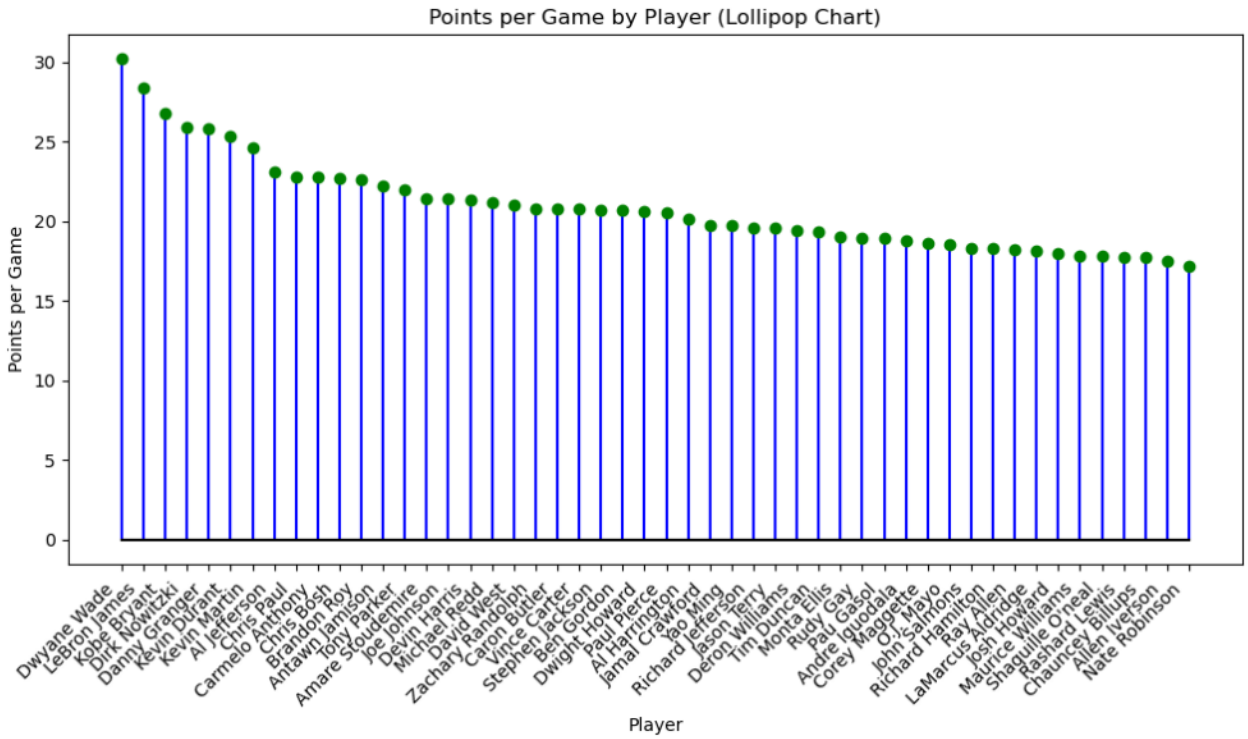
417 rows × 6 columns

```
from shapely.geometry import Point
import geopandas as gpd
from geopandas import GeoDataFrame
import geodatasets

geometry = [Point(xy) for xy in zip(geocoded_df['Longitude'], geocoded_df['Latitude'])]
gdf = GeoDataFrame(geocoded_df, geometry=geometry)

# This is a simple map with geopandas
world = gpd.read_file(geodatasets.data.naturalearth.land['url'])
gdf.plot(ax=world.plot(figsize=(10, 6)), marker='o', color='orange', markersize=15);
```



Python – Lollipop Chart

```python
# Create lollipop chart

# Load the players dataset into the data frame
ppg_df = pd.read_csv('ppg2008.csv')

# Trim whitespace from column names
ppg_df.columns = ppg_df.columns.str.strip()

plt.figure(figsize=(10, 6))
plt.stem(ppg_df['Name'], ppg_df['PTS'], linefmt='b-', markerfmt='go', basefmt='k-')  # green markers
plt.xticks(rotation=45, ha='right')
plt.xlabel('Player')
plt.ylabel('Points per Game')
plt.title('Points per Game by Player (Lollipop Chart)')
plt.tight_layout()

# Show plot
plt.show()
```



Charts in R

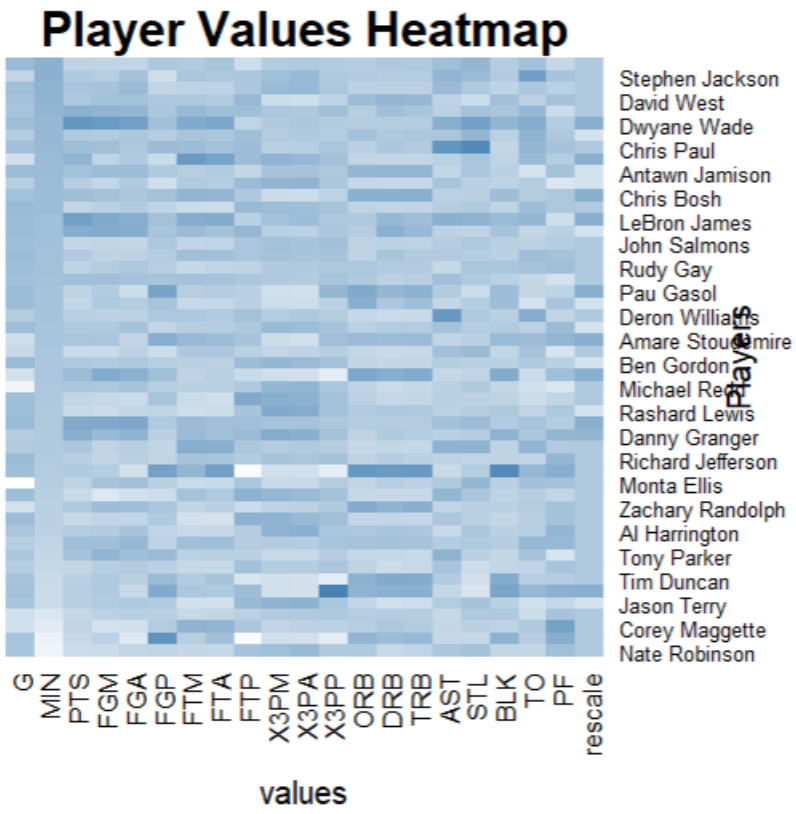
```{r}
library("readxl")
players_df <- read.csv("ppg2008.csv")
players_df
```

Name <chr>	G <int>	MIN <dbl>	PTS <dbl>	FGM <dbl>	FGA <dbl>	FGP <dbl>	F... <dbl>	FTA <dbl>	FTP <dbl>
Dwyane Wade	79	38.6	30.2	10.8	22.0	0.491	7.5	9.8	0.765
LeBron James	81	37.7	28.4	9.7	19.9	0.489	7.3	9.4	0.780
Kobe Bryant	82	36.2	26.8	9.8	20.9	0.467	5.9	6.9	0.856
Dirk Nowitzki	81	37.7	25.9	9.6	20.0	0.479	6.0	6.7	0.890
Danny Granger	67	36.2	25.8	8.5	19.1	0.447	6.0	6.9	0.878
Kevin Durant	74	39.0	25.3	8.9	18.8	0.476	6.1	7.1	0.863
Kevin Martin	51	38.2	24.6	6.7	15.9	0.420	9.0	10.3	0.867
Al Jefferson	50	36.6	23.1	9.7	19.5	0.497	3.7	5.0	0.738
Chris Paul	78	38.5	22.8	8.1	16.1	0.503	5.8	6.7	0.868
Carmelo Anthony	66	34.5	22.8	8.1	18.3	0.443	5.6	7.1	0.793

1-10 of 50 rows | 1-10 of 21 columns Previous 1 2 3 4 5 Next

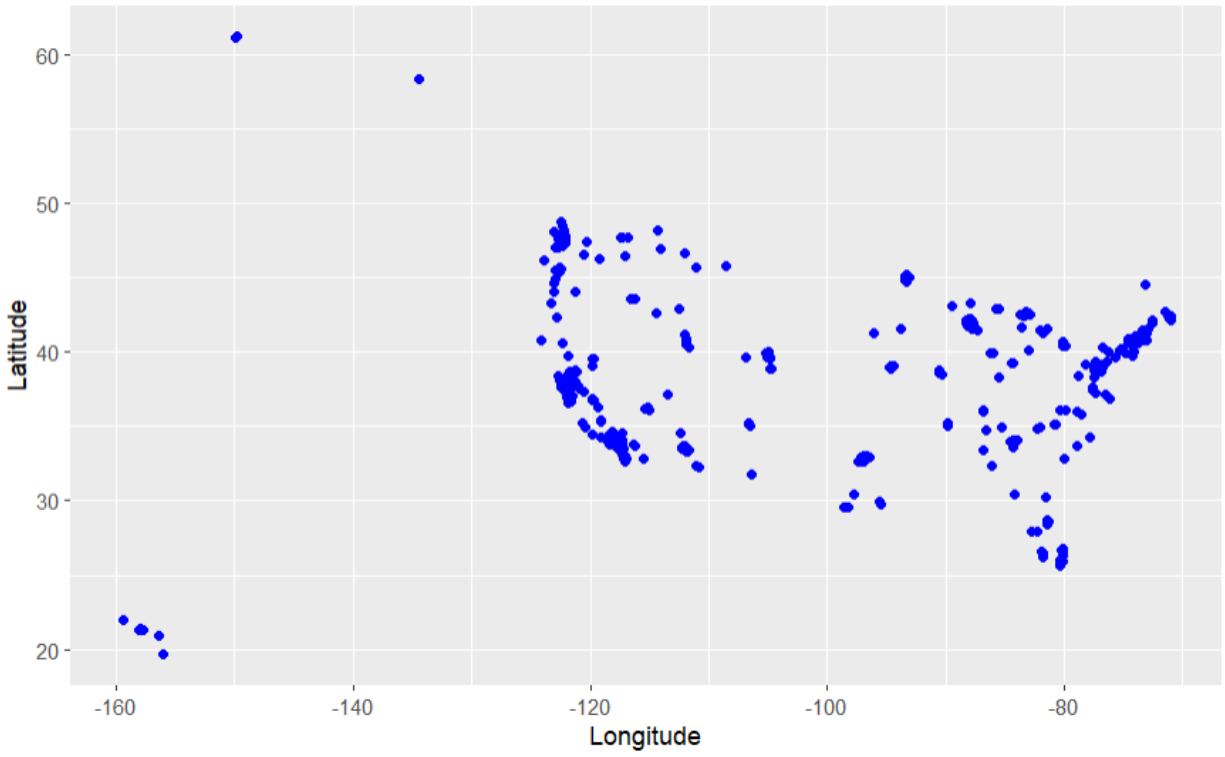
R –Heatmap:

```r
# HeatMap


# install.packages("ggplot2")
# install.packages("plyr")
# install.packages("scales")
library(ggplot2)
library(plyr)
library(scales)

# Remove the Name column from the dataframe
rownames(players_df) <- players_df$Name
players_df <- players_df[-1]

#Create the heatmap
heatmap(as.matrix(players_df), Rowv = NA, Colv = NA, scale="column",
        xlab = "values", ylab = "Players", main = "Player Values Heatmap",
        col = colorRampPalette(c("white", "steelblue"))(256))
```



R – Spatial chart:

```r
# install.packages("ggplot2")
 install.packages("maps")
library(ggplot2)
library(maps)

# Import the data with coordinates
world <- geocoded_df

# Plot the map. group = group connects the points in the correct order
ggplot(data = world, aes(x = Longitude, y = Latitude, group = State)) +
  geom_point(color = "blue")
```



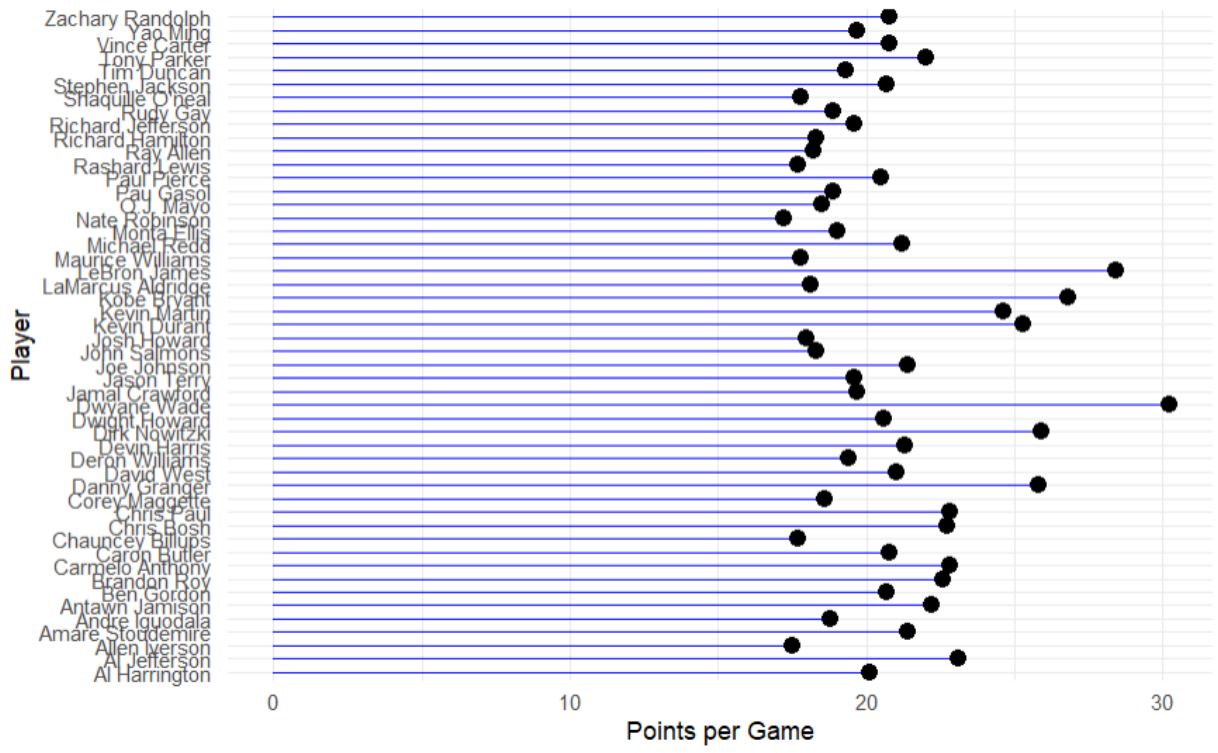
R – Lollipop Chart:

```r
```{r}

# Create Lollipop Chart

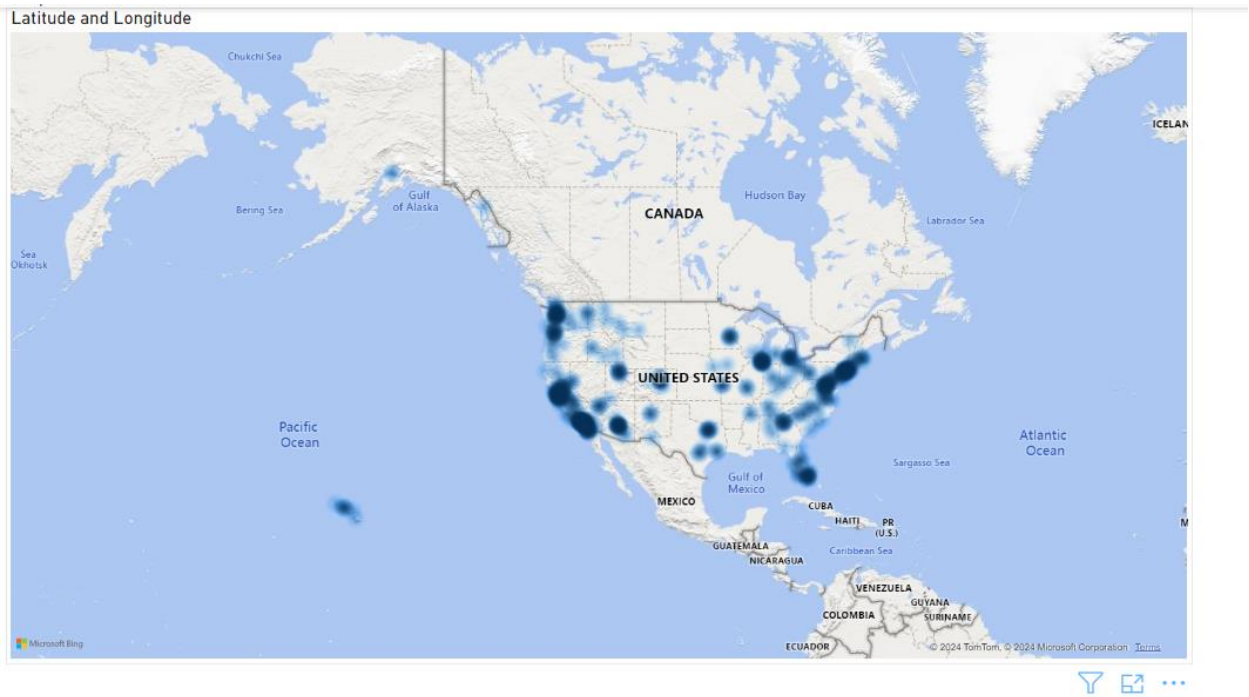
# install.packages("ggplot2")
library(ggplot2)

ggplot(players_df, aes(x = Name, y = PTS)) +
  geom_segment(aes(x = Name, xend = Name, y = 0, yend = PTS), color = "blue") +
  geom_point(coclo = "blue", size = 3) +
  coord_flip() +
  labs(x = "Player", y = "Points per Game") +
  theme_minimal()
```
```



Charts in POWER BI

Power BI –Heatmap:



Power BI – Spatial chart:

Power BI –Lollipop Chart: