Streaming Yahoo Finance Data with AWS Lambda

Overview:

Data analysis of results from AWS Lambda SQL queries.
Seaborn was used to generate visualizations and insights.
All representd stock price data is from May 02, 2022.

Importing Libraries and Athena Query Results

In [28]:

```
import csv
import numpy
import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
```

In [2]:

```
visuals_df = pd.read_csv('results.csv')
```

Question 1:

In [29]:

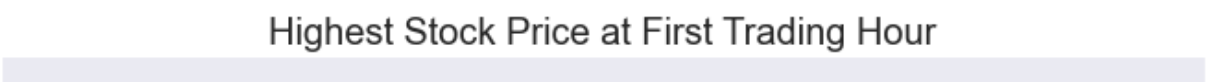
```
first_hour = visuals_df[(visuals_df.hourNum == 9)]
first_hour = first_hour.sort_values(by='highestPrice', ascending=False)
```

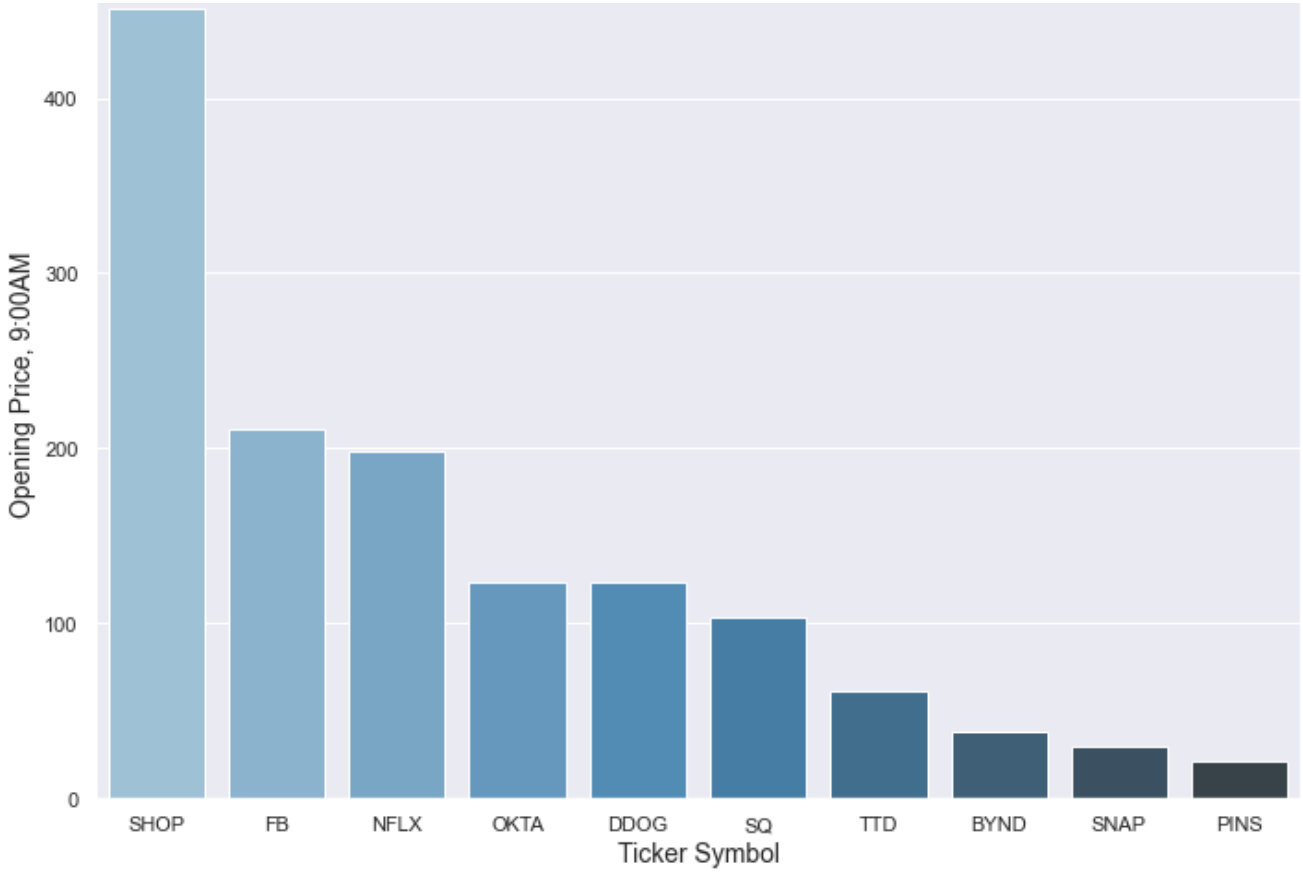
In [38]:

```
sns.set(font="Helvetica Neue")
sns.set(rc={'figure.figsize':(11.7,8.27)})
ax = sns.barplot(x="StockName", y="highestPrice", data=first_hour, palette="Blues_d")
ax.set_xlabel("Ticker Symbol", fontsize = 14)
ax.set_ylabel("Opening Price, 9:00AM", fontsize = 14)
ax.set_title("Highest Stock Price at First Trading Hour", fontsize = 20)
```

Out[38]:

```
Text(0.5, 1.0, 'Highest Stock Price at First Trading Hour')
```





Question 2:

In [58]:

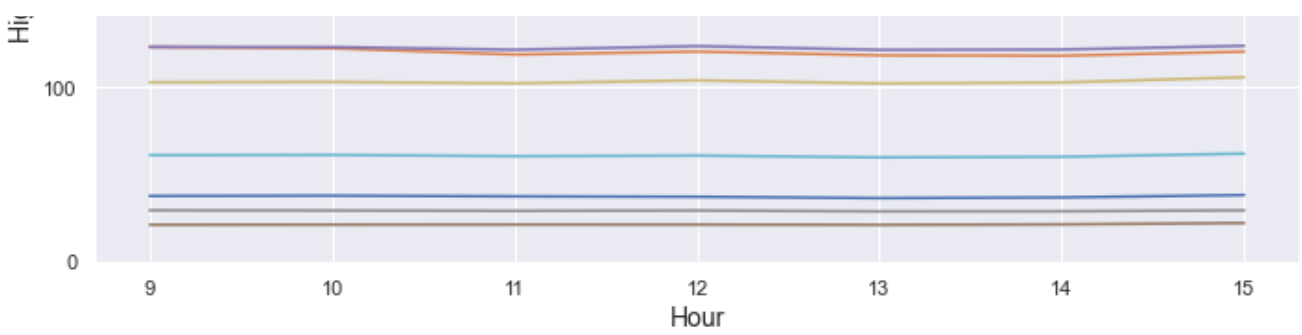
```
price_trend = visuals_df.drop(columns=['ts'])
```

In [57]:

```
sns.set(font="Helvetica Neue")
sns.set(rc={'figure.figsize':(11.7,8.27)})
bx = sns.lineplot(data=price_trend, x="hourNum", y="highestPrice", hue="StockName")
bx.set_xlabel("Hour", fontsize = 14)
bx.set_ylabel("Highest Hourly Stock Price (USD)", fontsize = 14)
bx.set_title("Highest Hourly Stock Price by Company", fontsize = 20)
```

Out[57]:

```
Text(0.5, 1.0, 'Highest Hourly Stock Price by Company')
```



Question 3:

In [59]:

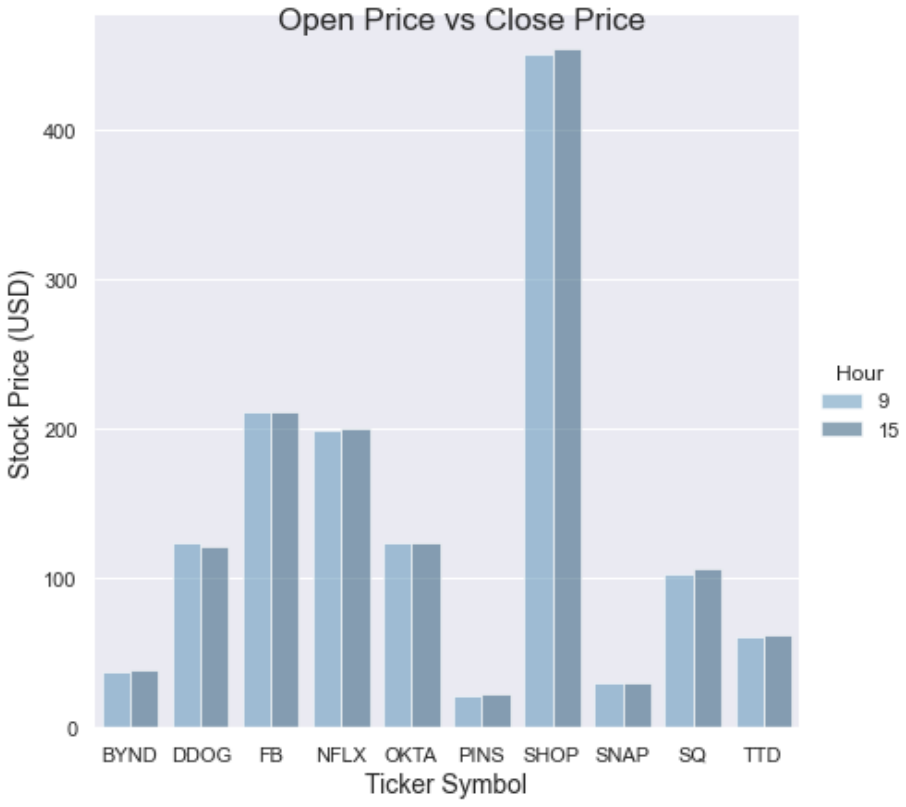
```
first_hour = visuals_df[(visuals_df.hourNum == 9)]
last_hour = visuals_df[(visuals_df.hourNum == 15)]
open_close = first_hour.append(last_hour)
```

In [124]:

```
sns.set(font="Helvetica Neue")
sns.set(rc={'figure.figsize':(11.7,8.27)})
cx = sns.catplot(
    data=open_close, kind="bar",
    x="StockName", y="highestPrice", hue="hourNum",
    ci="sd", palette="Blues_d", alpha=.6, height=6)
cx.despine(left=True)
cx.set_axis_labels("Ticker Symbol", "Stock Price (USD)", fontsize=14)
cx.legend.set_title("Hour")
cx.fig.suptitle('Open Price vs Close Price', fontsize=17)
```

Out[124]:

```
Text(0.5, 0.98, 'Open Price vs Close Price')
```



Question 4:

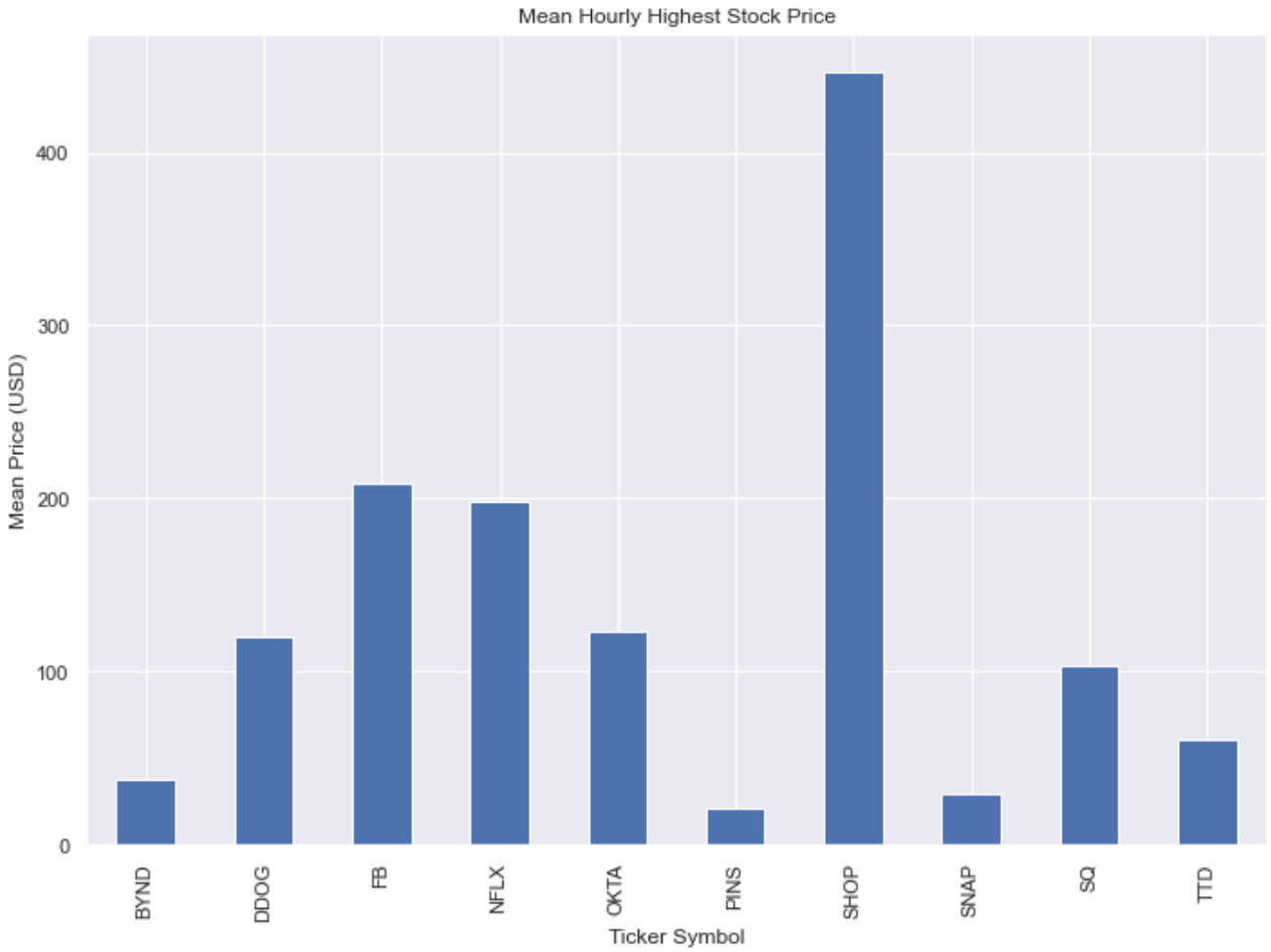
In [125]:

```
mean_price = visuals_df.groupby(['StockName'])['highestPrice'].mean()

sns.set(font="Helvetica Neue")
sns.set(rc={'figure.figsize':(11.7,8.27)})
mean_price.plot(kind='bar', title='Mean Hourly Highest Stock Price',  ylabel='Mean Price (USD)',
         xlabel='Ticker Symbol')
```

Out[125]:

```
<AxesSubplot:title={'center':'Mean Hourly Highest Stock Price'}, xlabel='Ticker Symbol', ylabel='Mean Price (USD)'>
```



In [ ]: