Data Analysis of Hourly High Stock Prices Collected on 05/02/2022

The list of the stocks whose pricing information grabbed is as follows:

- Facebook (FB)
- Shopify (SHOP)
- Beyond Meat (BYND)
- Netflix (NFLX)
- Pinterest (PINS)
- Square (SQ)
- The Trade Desk (TTD)
- Okta (OKTA)
- Snap (SNAP)
- Datadog (DDOG)

We start our analysis with importing the necessary libraries.

In [101…

```
import pandas as pd
import numpy as np
import seaborn as sns
import datetime
import matplotlib.pyplot as plt
%matplotlib inline
```

In [102…

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

We have total of 80 rows, and 4 columns.
Each row includes the ticker name, the highest hourly price, the subject hour and the datetime when the highest price occured for that hour.

In [103…

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 80 entries, 0 to 79
Data columns (total 4 columns):
 #   Column            Non-Null Count  Dtype
```

```
---  ------            --------------  -----
 0   company_name      80 non-null     object
 1   high_stock_price  80 non-null     float64
 2   hour              80 non-null     int64
 3   datetime          80 non-null     object
dtypes: float64(1), int64(1), object(2)
memory usage: 2.6+ KB
```

In [104…
```
df.head()
```

Out[104…

	company_name	high_stock_price	hour	datetime
0	BYND	37.804901	9	2022-05-02 09:57:00.000
1	BYND	37.990002	10	2022-05-02 10:34:00.000
2	BYND	37.590000	11	2022-05-02 11:33:00.000
3	BYND	37.330002	12	2022-05-02 12:21:00.000
4	BYND	36.570000	13	2022-05-02 13:09:00.000

For the sake of this analysis, I'll round up all stock prices to 2 decimal places as seen below.

In [105…
```
df = df.round(2)
```

In [106…
```
df.head()
```

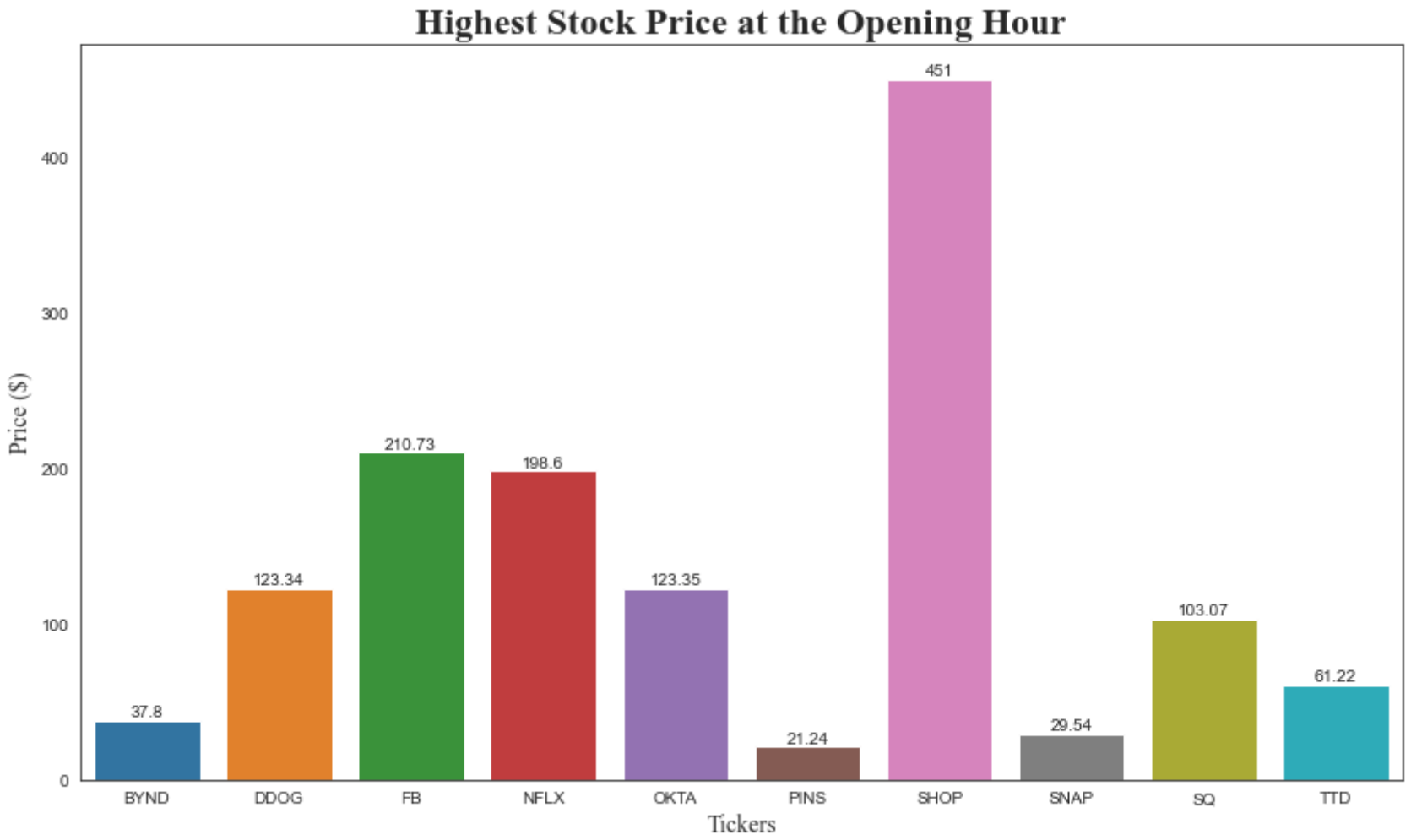
Out[106…

	company_name	high_stock_price	hour	datetime
0	BYND	37.80	9	2022-05-02 09:57:00.000
1	BYND	37.99	10	2022-05-02 10:34:00.000
2	BYND	37.59	11	2022-05-02 11:33:00.000
3	BYND	37.33	12	2022-05-02 12:21:00.000
4	BYND	36.57	13	2022-05-02 13:09:00.000

1) Highest Stock Price at the First Trading Hour (9:00 AM - 10:00 AM)

In [107…

```
first_trading_hour = df[df['hour'] == 9]

fig, ax = plt.subplots(figsize=(14,8))
sns.set_style("white", {'axes.grid' : False})
sns.set_context(rc = {"grid.linewidth": 0.6})

ax = sns.barplot(data = first_trading_hour,
    x='company_name',
    y='high_stock_price')

ax.bar_label(ax.containers[0])

plt.xlabel('Tickers', fontfamily = "Times New Roman", size = 14)
plt.ylabel('Price ($)', fontfamily = "Times New Roman", size = 14)
plt.title("Highest Stock Price at the Opening Hour", fontfamily = "Times New Roman", size = 22, weight='bold')

plt.show()
```



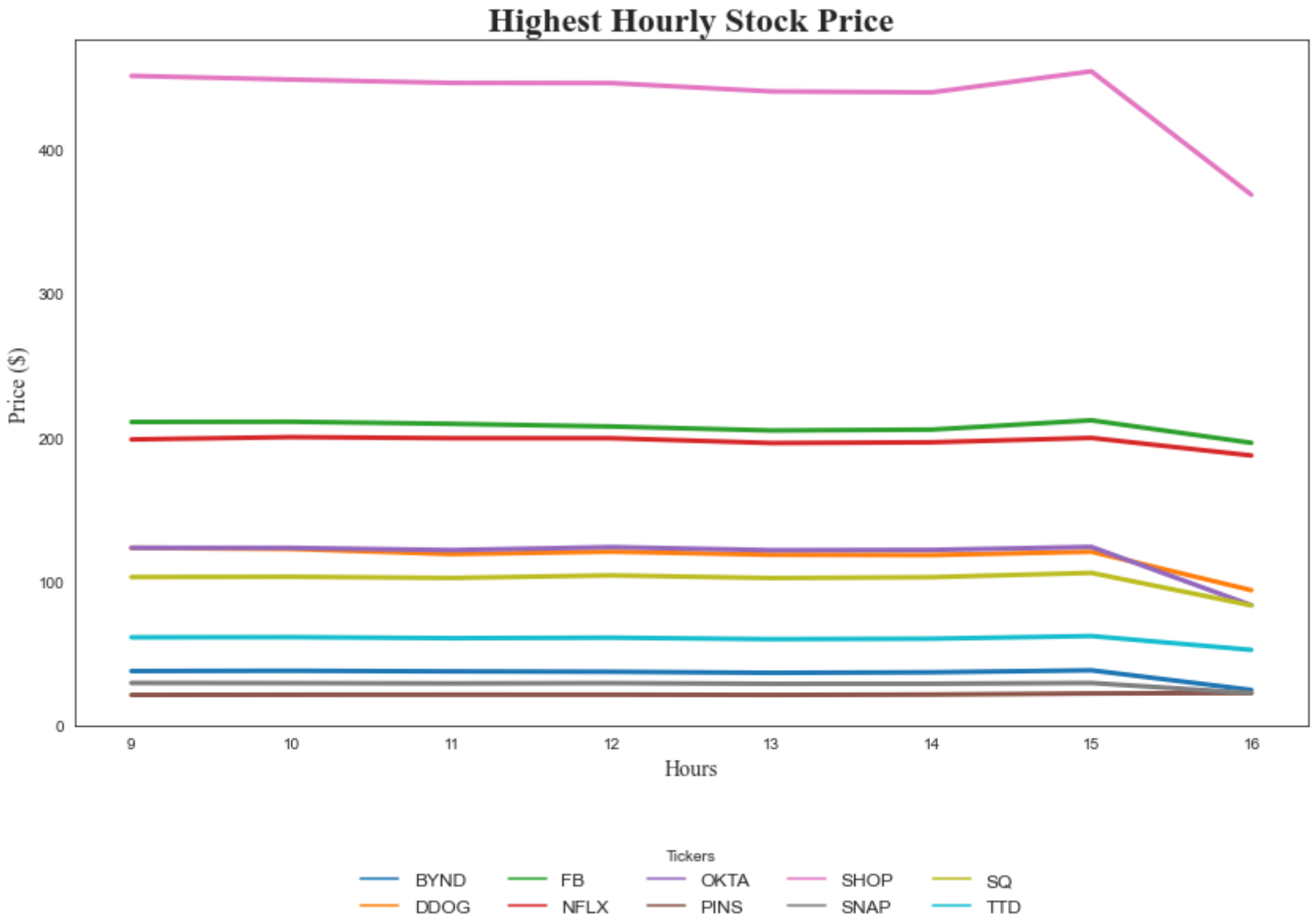
We find that the highest hourly stock price at the opening hour (9:00am - 10:00am) belongs to SHOP, followed by FB and NFLX on 05/02/2022

2) Highest Hourly Stock Price Trend

In [114…

```
fig, ax = plt.subplots(figsize=(14,8))
sns.set_style("white", {'axes.grid' : False})
sns.set_context(rc = {"grid.linewidth": 0.6})

sns.lineplot(data = df,
    x='hour',
```

```
    y='high_stock_price',
    linewidth = 3,
    ci=None,
    hue='company_name')

sns.move_legend(
    ax, "lower center",
    bbox_to_anchor=(0.5, -.3),
    ncol=5,
    title= 'Tickers' ,
    frameon=False,
    fontsize = 12
)

plt.xlabel('Hours', fontfamily = "Times New Roman", size = 14)
plt.ylabel('Price ($)', fontfamily = "Times New Roman", size = 14)
plt.title("Highest Hourly Stock Price", fontfamily = "Times New Roman", size = 22, weight='bold')

plt.show()
```



From the above graph, we can see that SHOP was priced much higher than the rest of selected stocks on 5/2/2022- valued around $480.

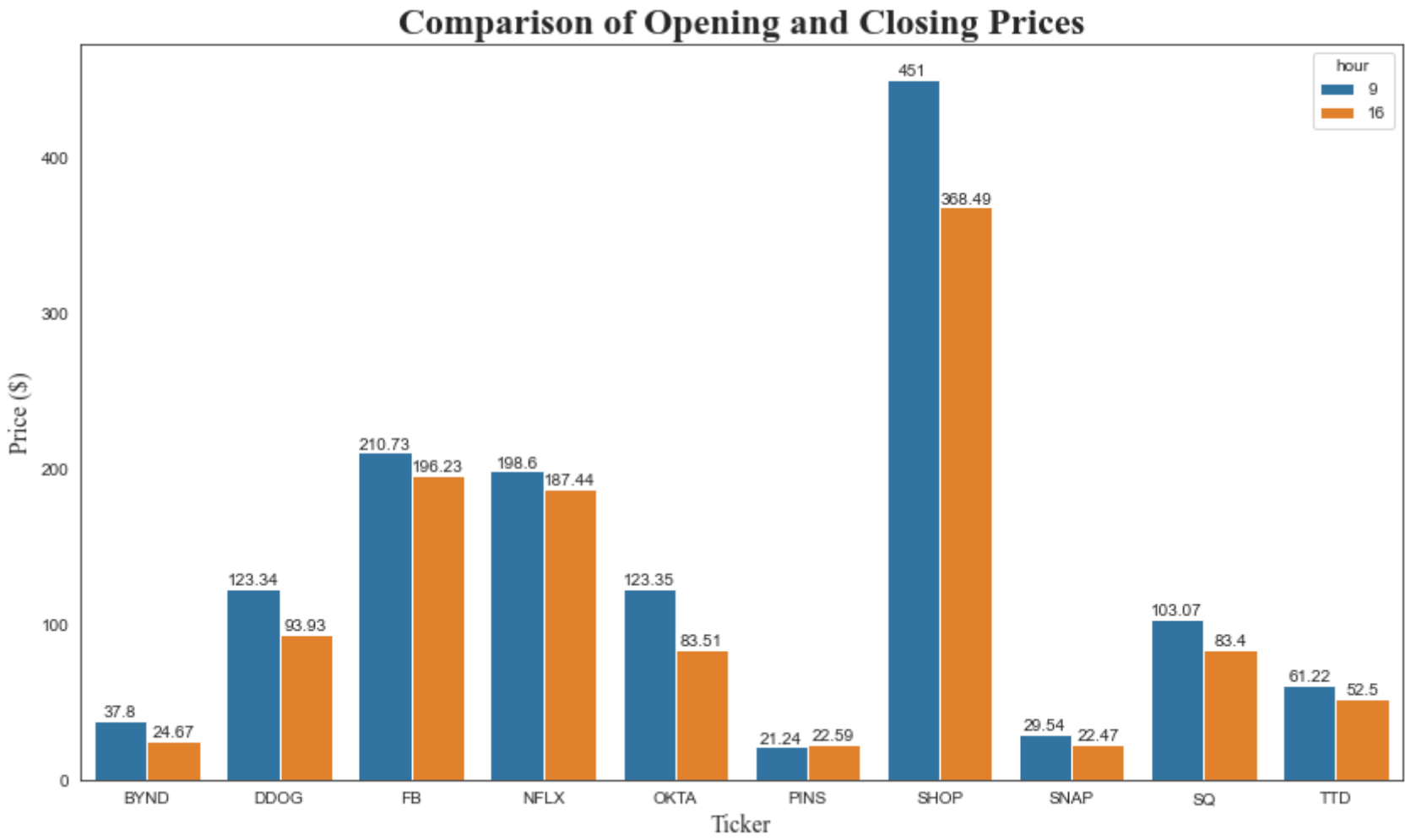
The second most expensive stock at that time was FB, followed by NFLX when both of them priced around $200.

Additionally, all hourly high stock prices were stagnant till 15:00, and then they gradually started to fall when it is about closing time of the day trading.

3) Comparison of Opening and Closing Prices

In [116…

```
open_close = df[df['hour'].isin([9, 16])]

fig, ax = plt.subplots(figsize=(14,8))
sns.set_style("white", {'axes.grid' : False})
sns.set_context(rc = {"grid.linewidth": 0.6})

ax = sns.barplot(data = open_close,
    x='company_name',
    y='high_stock_price',
    hue=open_close['hour'])

for container in ax.containers:
    ax.bar_label(container)

plt.xlabel('Ticker', fontfamily = "Times New Roman", size = 14)
plt.ylabel('Price ($)', fontfamily = "Times New Roman", size = 14)
plt.title("Comparison of Opening and Closing Prices", fontfamily = "Times New Roman", size = 22, weight='bold')

plt.show()
```



We can see that all of the stocks lost value at the closing hour except PINS

And although it seems like SHOP dropped the most compared with other stocks, this is not correct.

In fact, OKTA and BYND lost the most value with around %33 drop from their opening price, followed by DDOG losing %25 value and then SHOP with losing value around %18.

4) Average Highest Hourly Stock Price

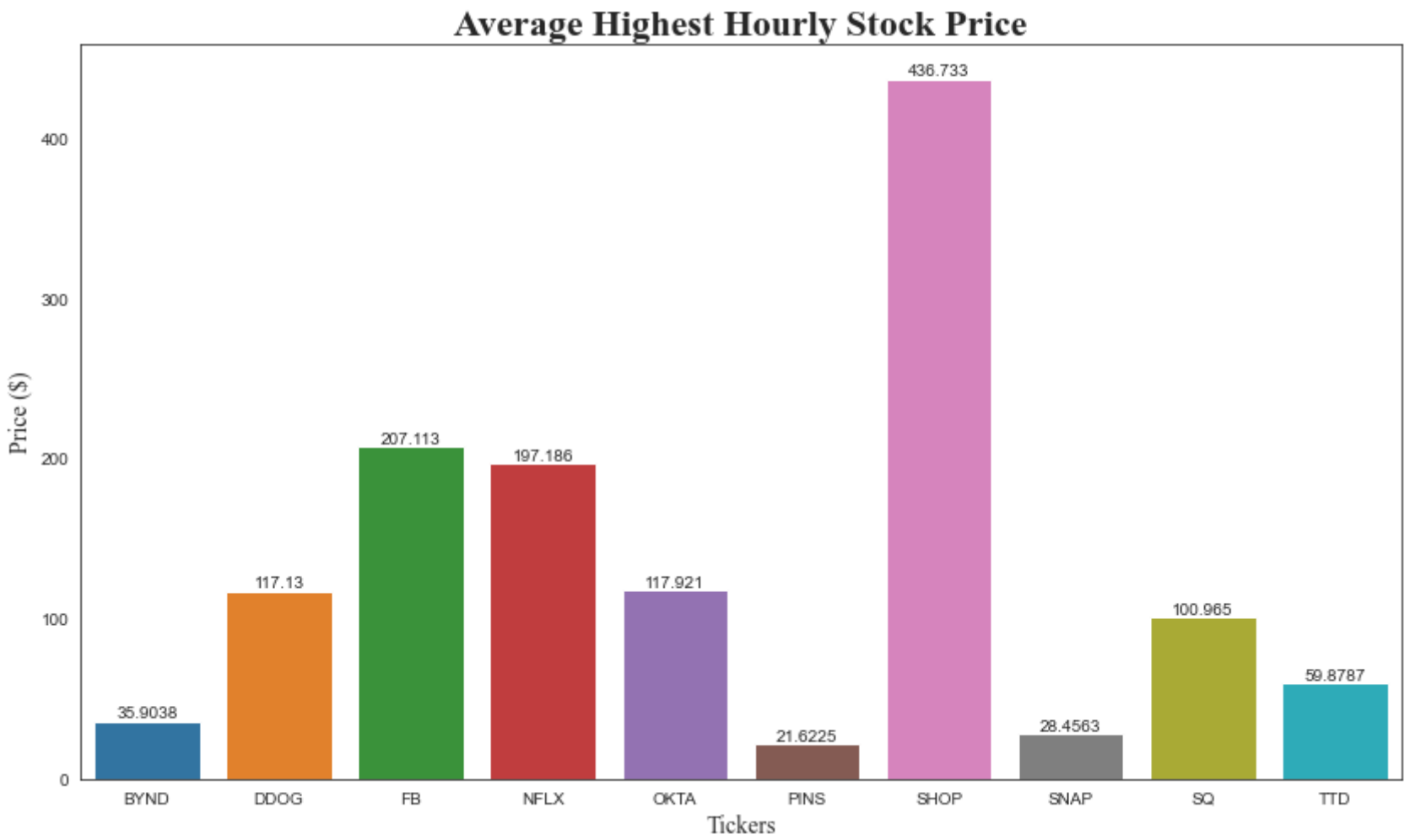
In [117…

```
avg_price = df.groupby('company_name').mean()['high_stock_price'].to_frame().reset_index()
print(avg_price)
```

	company_name	high_stock_price
0	BYND	35.90375
1	DDOG	117.13000
2	FB	207.11250
3	NFLX	197.18625
4	OKTA	117.92125
5	PINS	21.62250
6	SHOP	436.73250
7	SNAP	28.45625
8	SQ	100.96500
9	TTD	59.87875

In [119…

```
fig, ax = plt.subplots(figsize=(14,8))
sns.set_style("white", {'axes.grid' : False})
sns.set_context(rc = {"grid.linewidth": 0.6})

ax = sns.barplot(data = avg_price,
    x='company_name',
    y='high_stock_price')

ax.bar_label(ax.containers[0])

plt.xlabel('Tickers', fontfamily = "Times New Roman", size = 14)
plt.ylabel('Price ($)', fontfamily = "Times New Roman", size = 14)
plt.title("Average Highest Hourly Stock Price", fontfamily = "Times New Roman", size = 22, weight='bold')

plt.show()
```



Similar to prior results, the highest avg hourly stock price again belongs to SHOP, followed by FB and NFLX.