

```
[2]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
[7]: # Read the CSV file from your local path
df = pd.read_csv(r'C:\\Users\\ADMIN\\Downloads\\archive (1)\\Tesla.csv')

# Display the first few rows
print(df.head())
```

	Date	Open	High	Low	Close	Volume	Adj Close
0	6/29/2010	19.000000	25.00	17.540001	23.889999	18766300	23.889999
1	6/30/2010	25.790001	30.42	23.299999	23.830000	17187100	23.830000
2	7/1/2010	25.000000	25.92	20.270000	21.959999	8218800	21.959999
3	7/2/2010	23.000000	23.10	18.709999	19.200001	5139800	19.200001
4	7/6/2010	20.000000	20.00	15.830000	16.110001	6866900	16.110001

```
[8]: # Show column info
df.info()

# Convert 'Date' column to datetime format
df['Date'] = pd.to_datetime(df['Date'], errors='coerce')

# Drop rows where 'Date' is missing or invalid
df.dropna(subset=['Date'], inplace=True)

# Drop duplicates if any
df.drop_duplicates(inplace=True)

# Check for missing values in any column
print(df.isnull().sum())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1692 entries, 0 to 1691
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype
---  -
 0   Date        1692 non-null   object
```

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1692 entries, 0 to 1691
Data columns (total 7 columns):
#   Column      Non-Null Count  Dtype
---  ---
0   Date         1692 non-null   object
1   Open         1692 non-null   float64
2   High         1692 non-null   float64
3   Low          1692 non-null   float64
4   Close        1692 non-null   float64
5   Volume       1692 non-null   int64
6   Adj Close    1692 non-null   float64
dtypes: float64(5), int64(1), object(1)
memory usage: 92.7+ KB
Date         0
Open         0
High         0
Low          0
Close        0
Volume       0
Adj Close    0
dtype: int64

```

```

[9]: # Add daily return percentage column
df['Daily Return'] = df['Close'].pct_change()

# Add 7-day moving average of Close price
df['MA_7'] = df['Close'].rolling(window=7).mean()

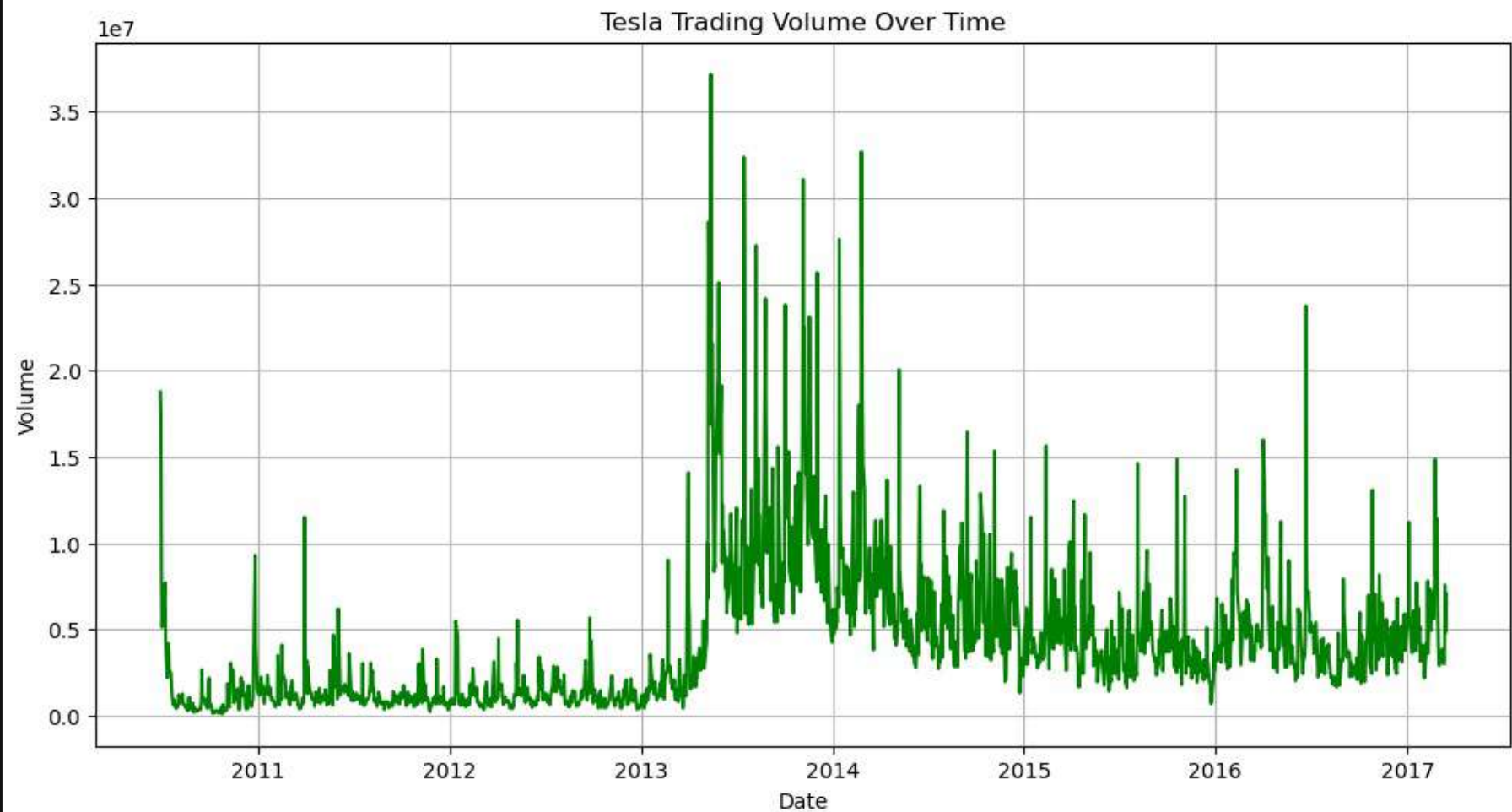
# Add price change (Close - Open)
df['Price Change'] = df['Close'] - df['Open']

```

```

[10]: plt.figure(figsize=(12,6))
plt.plot(df['Date'], df['Volume'], color='green')
plt.title('Tesla Trading Volume Over Time')
plt.xlabel('Date')
plt.ylabel('Volume')
plt.grid(True)
plt.show()

```



```
[11]: plt.figure(figsize=(10,6))
plt.scatter(df['High'], df['Low'], alpha=0.5, c='red')
plt.title('Tesla Daily High vs Low Prices')
plt.xlabel('High Price')
plt.ylabel('Low Price')
plt.grid(True)
plt.show()
```

Date

```
[11]: plt.figure(figsize=(10,6))
plt.scatter(df['High'], df['Low'], alpha=0.5, c='red')
plt.title('Tesla Daily High vs Low Prices')
plt.xlabel('High Price')
plt.ylabel('Low Price')
plt.grid(True)
plt.show()
```



```
[12]: plt.figure(figsize=(12,6))
plt.plot(df['Date'], df['Price Change'], color='blue')
plt.axhline(0, color='gray', linestyle='--')
plt.title('Tesla Daily Price Change (Close - Open)')
plt.xlabel('Date')
plt.ylabel('Price Change ($)')
plt.grid(True)
plt.show()
```

