real-time stock market data

In [2]:

linkcode

import pandas as pd

import yfinance as yf

from datetime import datetime

start\_date = datetime.now() - pd.DateOffset(months=3)

end\_date = datetime.now()

tickers = ['AAPL', 'MSFT', 'NFLX', 'GOOG']

*# Apple, Microsoft, Netflix, and Google*

df\_list = []

for ticker **in** tickers:

data = yf.download(ticker, start=start\_date, end=end\_date)

df\_list.append(data)

df = pd.concat(df\_list, keys=tickers, names=['Ticker', 'Date'])

print(df.head())

Index column in the DataFrame

In [3]:

linkcode

df = df.reset\_index()

print(df.head())

Stock Market

In [4]:

import plotly.express as px

fig = px.line(df, x='Date',

y='Close',

color='Ticker',

title="Stock Market Performance for the Last 3 Months")

fig.show()

Compare the Performance of Companies

* look at the faceted area chart, which makes it easy to compare the performance of different companies and identify similarities or differences in their stock price movements:

In [5]:

linkcode

fig = px.area(df, x='Date', y='Close', color='Ticker',

facet\_col='Ticker',

labels={'Date':'Date', 'Close':'Closing Price', 'Ticker':'Company'},

title='Stock Prices for Apple, Microsoft, Netflix, and Google')

fig.show()

Analyze Moving Averages

* analyze moving averages, which provide a useful way to identify trends and patterns in each company’s stock price movements over a period of time:

In [6]:

linkcode

df['MA10'] = df.groupby('Ticker')['Close'].rolling(window=10).mean().reset\_index(0, drop=True)

df['MA20'] = df.groupby('Ticker')['Close'].rolling(window=20).mean().reset\_index(0, drop=True)

for ticker, group **in** df.groupby('Ticker'):

print(f'Moving Averages for **{**ticker**}**')

print(group[['MA10', 'MA20']])

Visualize the Moving Averages

* how to visualize the moving averages of all companies:

In [7]:

linkcode

for ticker, group **in** df.groupby('Ticker'):

fig = px.line(group, x='Date', y=['Close', 'MA10', 'MA20'],

title=f"**{**ticker**}** Moving Averages")

fig.show()

df['Volatility'] = df.groupby('Ticker')['Close'].pct\_change().rolling(window=10).std().reset\_index(0, drop=True)

fig = px.line(df, x='Date', y='Volatility',

color='Ticker',

title='Volatility of All Companies')

fig.show()

*# create a DataFrame with the stock prices of Apple and Microsoft*

apple = df.loc[df['Ticker'] == 'AAPL', ['Date', 'Close']].rename(columns={'Close': 'AAPL'})

microsoft = df.loc[df['Ticker'] == 'MSFT', ['Date', 'Close']].rename(columns={'Close': 'MSFT'})

df\_corr = pd.merge(apple, microsoft, on='Date')

*# create a scatter plot to visualize the correlation*

fig = px.scatter(df\_corr, x='AAPL', y='MSFT',

trendline='ols',

title='Correlation between Apple and Microsoft')

fig.show()

### There is a strong linear relationship between the stock prices of Apple and Microsoft, which means that when the stock price of Apple increases, the stock price of Microsoft also tends to increase. It is a sign of a strong correlation or similarity between the two companies, which can be due to factors such as industry trends, market conditions, or common business partners or customers. For investors, this positive correlation may indicate an opportunity to diversify their portfolio by investing in both companies, as both stocks may offer similar potential returns and risks.

# Conclusion

* Stock Market Performance Analysis involves calculating moving averages, measuring volatility, conducting correlation analysis, and analyzing various aspects of the stock market to gain a deeper understanding of the factors that affect stock prices and the relationships between the stock prices of different companies.