Stock Analysis & Fund Allocation using ML tools

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Data Acquisition and Preparation:

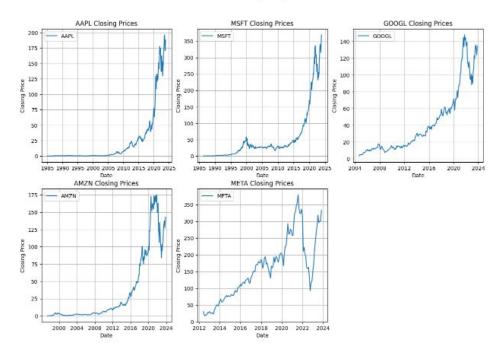


Data Acquisition and Preparation:

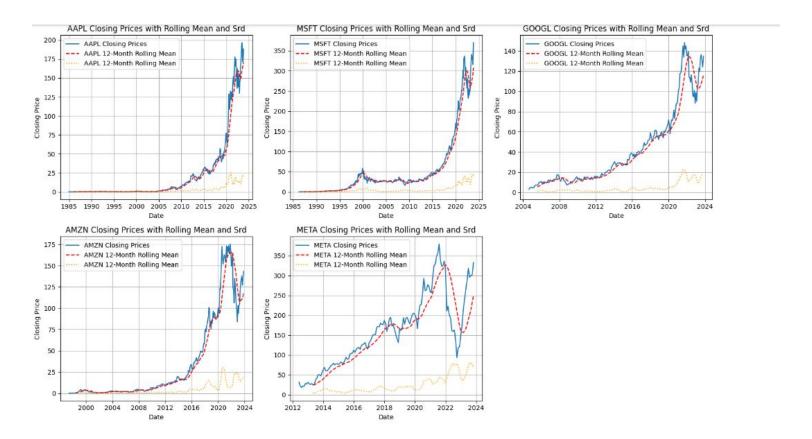
Stocks of Interest: Apple, Meta, Amazon, Google, Microsoft.

Stock prices for past 50 years is collected and visualized.

Historical Monthly Closing Prices



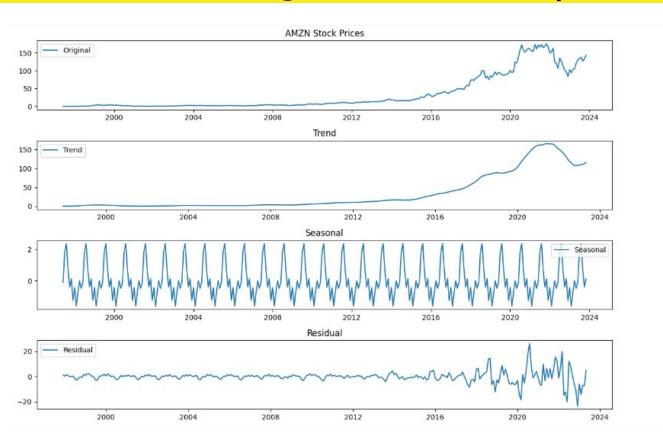
Statistical Analysis, Stationary test using Rolling Mean:



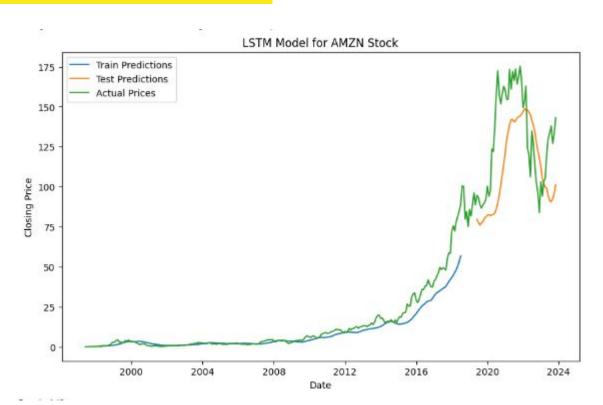
Statistical Analysis, Stationary test using ADF Method:

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ADF Test Results for AAPL (Index 0):
ADF Statistic: 2.0873915105910172
p-value: 0.9987762842138527
Critical Values: {'1%': -3.444965543297668, '5%': -2.8679842369272976, '10%': -2.5702025382716047}
Fail to reject the null hypothesis. The time series may not be stationary.
ADF Test Results for MSFT (Index 1):
ADF Statistic: 2,447288035958361
p-value: 0.9990308541521641
Critical Values: {'1%': -3.445542818501549, '5%': -2.868238133603207, '10%': -2.5703378690483176}
Fail to reject the null hypothesis. The time series may not be stationary.
ADF Test Results for GOOGL (Index 2):
ADF Statistic: 1.1926380548955156
p-value: 0.995934622336358
Critical Values: {'1%': -3.4609922013325267, "5%': -2.875015740963014, "10%': -2.5739524288408777}
Fail to reject the null hypothesis. The time series may not be stationary.
ADF Test Results for AMZN (Index 3):
ADF Statistic: 0.06430173188034007
p-value: 0.963537578179066
Critical Values: {'1%': -3.4521902441030963, '5%': -2.871158406898617, '10%': -2.5718948388228586}
Fail to reject the null hypothesis. The time series may not be stationary.
ADF Test Results for META (Index 4):
ADF Statistic: -1.7496209059529022
p-value: 0.40574448311015243
Critical Values: {'1%': -3.480500383888377, '5%': -2.8835279559405045, '10%': -2.578495716547007}
Fail to reject the null hypothesis. The time series may not be stationary.
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Statistical Analysis, Extracting Trend, Cyclical and patterns



RNN Model, for Predictions:

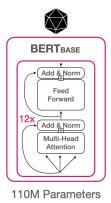


Sentimental Analysis, using FinBert & Transformers:

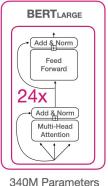
Used Selenium to read live, Stock News from Google Stocks and used Bert Model to get the sentiment of the Stock

aapl ['Apple (NASDAQ:AAPL) Stock: An Under-the-Radar AI Play - TipRanks.com', 'Apple Stock: The Good and Bad News for AAPL Investors', 'Top Stock Reports for Apple, Broadcom & Adobe msft ['Microsoft (MSFT) stock forecast and price prediction', "After Crushing it in 2023, MSFT Stock isn't Slowing Down", 'Wall Street sets Microsoft stock price for the next 12 mon googl ["Alphabet Stock (NASDAQ:GOOGL): Ackman's Pershing Square Capital Signals a Buy - TipRanks.com", 'Why Alphabet Inc. (NASDAQ:GOOGL) Could Be Worth Watching', "GOOG Stock: What amazn ["Can AMZN Stock Still Double Your Money? Here's the Answer.", 'Amazon Stock (NASDAQ:AMZN): Every Analyst Covering It Says "Buy." Should You?', 'Amazon's stock reaches a milestometa ['Meta Stock Is On A Winning Streak. Analysts Like New Amazon Tie-Up.', 'Meta Platforms (NASDAQ:META) stock performs better than its underlying earnings growth over last year',

BERT Size & Architecture











To DO:

Based on Above results get a right strategy to invest and allocate funds in the above stocks.

For example if we want to invest **100k\$** in above stocks what would be amount

that needs to be invested



THANK YOU