Plot Performance Difference vs Benchmark Index - Question & Answer

# Question:

Compare performance of MSFT and AAPL to the S&P 500 by normalizing their prices and plotting percentage differences.

# Answer (Code):

# Create list of tickers  
tickers = ['MSFT', 'AAPL']  
  
# Import stock data here  
stocks = pd.read\_csv('msft\_aapl.csv', parse\_dates=['date'], index\_col='date')  
  
# Import index here  
sp500 = pd.read\_csv('sp500.csv', parse\_dates=['date'], index\_col='date')  
  
# Concatenate stocks and index here  
data = pd.concat([stocks, sp500], axis=1).dropna()  
  
# Normalize data  
normalized = (data / data.iloc[0]) \* 100  
  
# Subtract the normalized index from the normalized stock prices, and plot the result  
(normalized[tickers].sub(normalized['SP500'], axis=0)).plot()  
plt.show()

## Question Explanation (20 words):

The question calculates and visualizes performance difference between individual stocks and S&P 500 using normalized price data.

## Answer Explanation (20 words):

We use normalization to scale values to 100, subtract SP500 to find differences, and plot the result for analysis.

## Reference Image:

