

```
In [58]: import pandas as pd
import yfinance as yf
import numpy as np
import pandas_datareader.data as web

import requests
import matplotlib.pyplot as plt
```

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In [59]: api_key="https://financialmodelingprep.com/api/v3/financial-statement-symbol-lists?api

company="AAPL"
years=2

income_statement=requests.get(f"https://financialmodelingprep.com/api/v3/income-staten
income_statement=requests.get(f"https://financialmodelingprep.com/api/v3/income-staten

income_statement=income_statement.json()

print(income_statement)
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```

```

In [60]: print(income_statement[0]['revenue'])
         print(income_statement[0]['grossProfit'])
         print(income_statement[0]['operatingIncome'])

```

```

394328000000
170782000000
119437000000

```

```

In [61]: revenues=[income_statement[i]['revenue'] for i in range(len(income_statement))]
         #reverse it because the years go from most recent to least if you do [0]...
         revenues=list(reversed([income_statement[i]['revenue'] for i in range(len(income_statement))]))
         profits=list(reversed([income_statement[i]['grossProfit'] for i in range(len(income_statement))]))
         ebitda=list(reversed([income_statement[i]['ebitda'] for i in range(len(income_statement))]))
         net_income=list(reversed([income_statement[i]['netIncome'] for i in range(len(income_statement))]))

```

```

In [62]: #convert to array for calculation
         revenues_array=np.array(revenues)
         profits_array=np.array(profits)

```

```
ebitda_array=np.array(ebitda)
net_income_array=np.array(net_income)
```

```
In [63]: gross_profit_margin=(profits_array/revenues_array)*100
gross_profit_margin
```

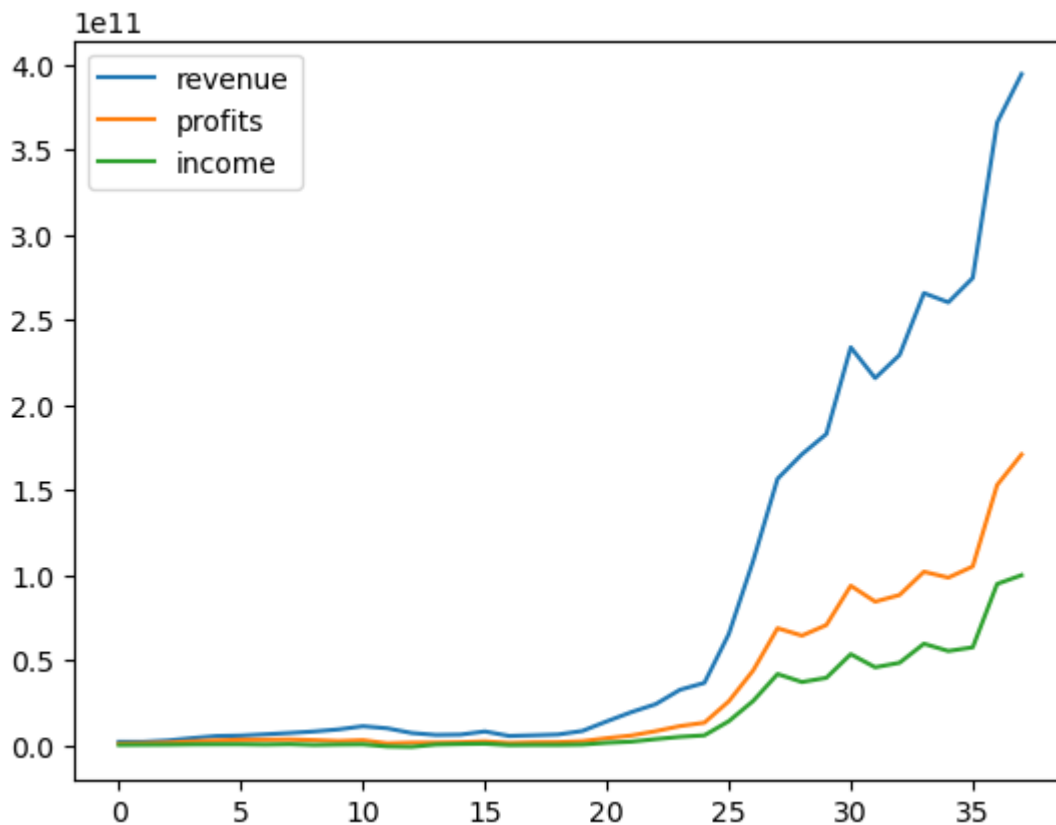
```
Out[63]: array([43.90866913, 55.83364004, 53.94009996, 53.00879304, 51.36260409,
56.75913932, 50.70853411, 46.74098638, 36.28306381, 25.50764261,
25.83619599, 9.84440151, 19.31930518, 24.89479886, 27.64916857,
27.1326569 , 23.02815588, 27.91710206, 27.51731916, 27.28590409,
29.02160649, 28.98265597, 33.96650837, 34.31448013, 35.9635438 ,
39.37753929, 40.47889588, 43.87123981, 37.62448072, 38.58803578,
40.05990202, 39.07595565, 38.46986049, 38.34371882, 37.81776811,
38.23324773, 41.77935963, 43.30963056])
```

```
In [64]: net_profit_margin=(net_income_array/revenues_array)*100
net_profit_margin
```

```
Out[64]: array([ 3.19032477,  8.09716599,  8.17331179,  9.83199882,
 8.59197578,  8.54382556,  4.91060107,  7.48465392,
 1.08562116,  3.37562854,  3.8329416 , -8.29858639,
-14.75780257,  5.20114459,  9.79784806,  9.84592259,
-0.466157 ,  1.13200975,  1.11164814,  3.33373596,
 9.58294451, 10.29769609, 14.56302591, 14.88346316,
15.61157183, 21.48409352, 23.94664154, 26.6650906 ,
21.67046984, 21.61437676, 22.8457737 , 21.18679831,
21.09242085, 22.41420207, 21.23809451, 20.91361128,
25.88179336, 25.30964071])
```

```
In [65]: plt.plot(revenues,label="revenue")
plt.plot(profits,label='profits')
plt.plot(net_income, label='income')
plt.legend()
```

```
Out[65]: <matplotlib.legend.Legend at 0x2261ef28a90>
```



```
import yfinance as yf
```

Define the stock ticker symbol

```
symbol = "AAPL"
```

Retrieve the financial statements using yfinance

```
try: financials = yf.Ticker(symbol).financials except Exception as e: print("Error: ", e)
```

Calculate financial ratios

```
revenue = financials.loc['Total Revenue'].values[-1] net_income = financials.loc['Net Income'].values[-1] eps = financials.loc['Basic EPS'].values[-1] pe_ratio = yf.Ticker(symbol).info['trailingPE']
```

Print the financial ratios

```
print("Revenue:", revenue) print("Net Income:", net_income) print("EPS:", eps) print("P/E Ratio:",  
pe_ratio)
```

Create a pandas DataFrame from the financial statements

```
df = pd.DataFrame(financials)
```

Calculate the revenue growth rate

```
revenue_growth = df.pct_change()["Total Revenue"].mean() * 100
```

Calculate the return on equity (ROE)

```
net_income = df.loc["Net Income"].values shareholders_equity = df.loc["Total Stockholder  
Equity"].values ROE = net_income / shareholders_equity
```

Calculate the price-to-earnings (P/E) ratio

```
price = yf.Ticker(symbol).info["regularMarketPrice"] earnings = df.loc["Net Income"].iloc[-1]  
shares_outstanding = yf.Ticker(symbol).info["sharesOutstanding"] EPS = earnings /  
shares_outstanding PE_ratio = price / EPS
```

Print the results

```
print(f"Revenue growth rate: {revenue_growth:.2f}%") print(f"Return on equity: {ROE[-1]:.2f}")  
print(f"P/E ratio: {PE_ratio:.2f}")
```

```
import requests
```

Define the stock ticker symbol and API key

```
symbol = "AAPL" api_key = "YOUR_API_KEY"
```

Retrieve the financial statements using Alpha Vantage

```
try: url = f"https://www.alphavantage.co/query?function=INCOME_STATEMENT&symbol={symbol}&apikey={api_key}"
response = requests.get(url)
data = response.json()
financials = data['annualReports']
except Exception as e: print("Error: ", e)
```

Calculate financial ratios

```
revenue = float(financials[0]['totalRevenue'])
net_income = float(financials[0]['netIncome'])
eps = net_income / float(financials[0]['weightedAverageShsOut'])
pe_ratio = requests.get(f"https://www.alphavantage.co/query?function=OVERVIEW&symbol={symbol}&apikey={api_key}").json()['PERatio']
```

Print the financial ratios

```
print("Revenue:", revenue)
print("Net Income:", net_income)
print("EPS:", eps)
print("P/E Ratio:", pe_ratio)
```

```
financials = None
try: financials = yf.Ticker(symbol).financials
except Exception as e: print("Error: ", e)
```

if financials is not None:

```
# Calculate financial ratios
revenue = financials.loc['Total Revenue'].values[-1]
net_income = financials.loc['Net Income'].values[-1]
eps = financials.loc['Basic EPS'].values[-1]
pe_ratio = yf.Ticker(symbol).info['trailingPE']

# Print the financial ratios
print("Revenue:", revenue)
print("Net Income:", net_income)
print("EPS:", eps)
print("P/E Ratio:", pe_ratio)
```

```
else: print("Financial data not available.")
```

In []:

In []:

In []: