```
import pandas as pd

df = pd.read_csv('financial_data.csv')
df.head()
```

```
     Company  Year          Revenue      Net Income
Assets  \
0  Microsoft  2025  263,400,000,000  89,500,000,000  490,600,000,000

1  Microsoft  2024  232,200,000,000  78,900,000,000  450,200,000,000

2  Microsoft  2023  211,900,000,000  72,400,000,000  411,600,000,000

3      Tesla  2024   96,800,000,000  14,900,000,000  110,300,000,000

4      Tesla  2025   99,660,000,000  15,700,000,000  115,700,000,000


       Liabilities        Cash Flow
0  198,300,000,000  101,200,000,000
1  195,000,000,000   95,600,000,000
2  191,800,000,000   89,000,000,000
3   41,200,000,000   16,000,000,000
4   43,100,000,000   17,200,000,000
```

```
# Convert financial columns to numeric values
cols_to_convert = ['Revenue', 'Net Income', 'Assets', 'Liabilities',
'Cash Flow']
for col in cols_to_convert:
    df[col] = pd.to_numeric(df[col].str.replace('[\$,B]', '',
regex=True), errors='coerce')

df['Revenue Growth (%)'] = df.groupby('Company')
['Revenue'].pct_change() * 100
df['Net Income Growth (%)'] = df.groupby('Company')['Net
Income'].pct_change() * 100
df['Assets Growth (%)'] = df.groupby('Company')['Assets'].pct_change()
* 100
df['Liabilities Growth (%)'] = df.groupby('Company')
['Liabilities'].pct_change() * 100
df['Cash Flow Growth (%)'] = df.groupby('Company')['Cash
Flow'].pct_change() * 100

df.describe()
```

```
              Year       Revenue    Net Income        Assets
Liabilities  \
count     9.000000  9.000000e+00  9.000000e+00  9.000000e+00
9.000000e+00
mean   2024.000000  2.435622e+11  6.532222e+10  3.074222e+11
1.741333e+11
```

```
std       0.866025  1.314140e+11  3.927759e+10  1.543544e+11
1.071108e+11
min    2023.000000  9.400000e+10  1.360000e+10  1.042000e+11
3.980000e+10
25%    2023.000000  9.966000e+10  1.570000e+10  1.157000e+11
4.310000e+10
50%    2024.000000  2.322000e+11  7.890000e+10  3.614000e+11
1.950000e+11
75%    2025.000000  3.833000e+11  9.690000e+10  4.116000e+11
2.829000e+11
max    2025.000000  4.127000e+11  1.048000e+11  4.906000e+11
2.894000e+11

          Cash Flow  Revenue Growth (%)  Net Income Growth (%)  \
count  9.000000e+00            6.000000               6.000000
mean   7.514444e+10           -5.094611              -5.962108
std    4.513979e+10            5.066099               6.818397
min    1.530000e+10          -11.845103             -13.375796
25%    1.720000e+10           -7.976675             -10.942251
50%    9.560000e+10           -4.698484              -6.243644
75%    1.091000e+11           -3.582674              -3.638589
max    1.186000e+11            2.954545               5.369128

       Assets Growth (%)  Liabilities Growth (%)  Cash Flow Growth (%)

count           6.000000                6.000000              6.000000

mean           -4.444102               -1.434782             -4.026490

std             5.606539                3.888364              6.214900

min            -9.939499               -7.656613            -11.046512

25%            -8.489179               -1.658365             -6.561223

50%            -5.334895               -1.459766             -5.041514

75%            -2.391564               -1.054664             -3.856582

max             4.895739                4.611650              7.500000
```

Compare Companies Side-by-Side

Average performance of each company over the three years.

```
df.groupby('Company')[['Revenue', 'Net Income', 'Assets',
'Liabilities', 'Cash Flow']].mean()
```

```
                Revenue    Net Income        Assets   Liabilities  \
Company
Apple      3.980333e+11  1.009667e+11  3.614000e+11  2.860000e+11
Microsoft  2.358333e+11  8.026667e+10  4.508000e+11  1.950333e+11
Tesla      9.682000e+10  1.473333e+10  1.100667e+11  4.136667e+10

               Cash Flow
Company
Apple      1.140000e+11
Microsoft  9.526667e+10
Tesla      1.616667e+10
```

Fastest Growing Company

```
df.groupby('Company')[['Revenue Growth (%)', 'Net Income Growth
(%)']].mean()
```

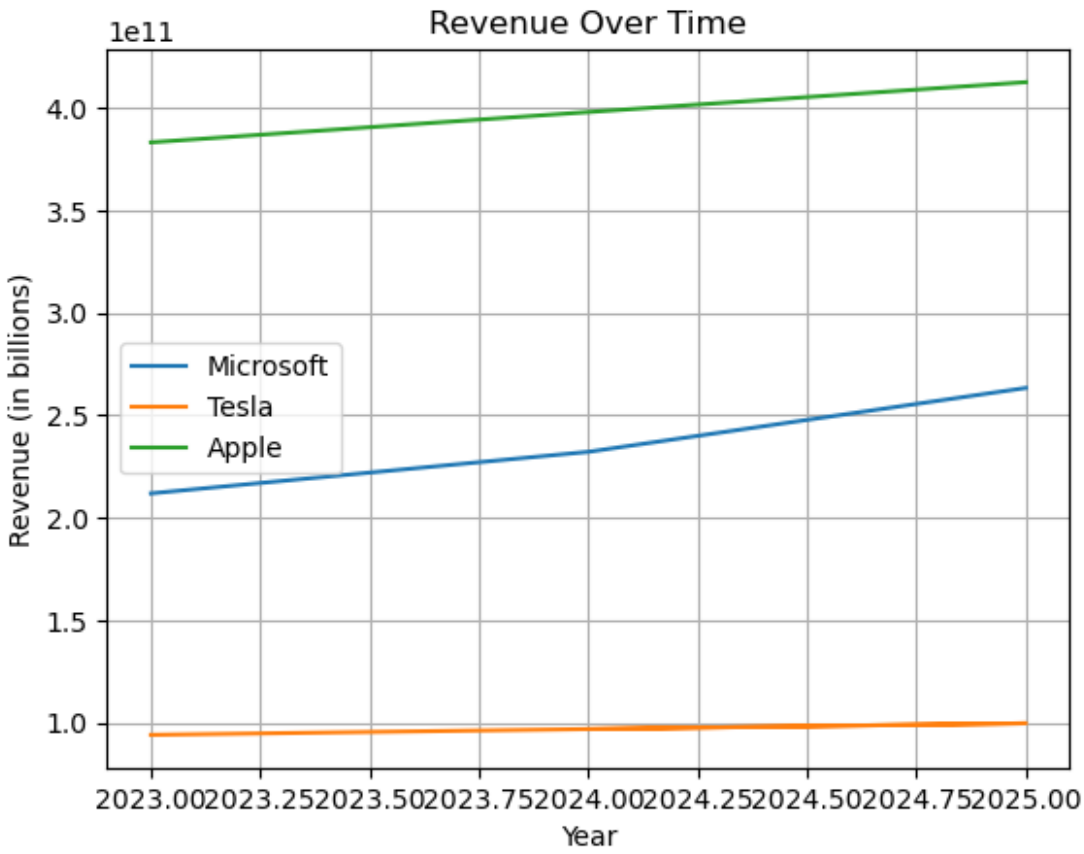
```
           Revenue Growth (%)  Net Income Growth (%)
Company
Apple                -3.627669              -3.842063
Microsoft           -10.293783             -10.040926
Tesla                -1.362382              -4.003334
```

Visualizing the Trends

```
import matplotlib.pyplot as plt

for company in df['Company'].unique():
    subset = df[df['Company'] == company]
    plt.plot(subset['Year'], subset['Revenue'], label=company)

plt.title('Revenue Over Time')
plt.xlabel('Year')
plt.ylabel('Revenue (in billions)')
plt.legend()
plt.grid(True)
plt.show()
```



Spot Strategic Signals

```
df['Debt Ratio'] = df['Liabilities'] / df['Assets']
df['Profit Margin (%)'] = (df['Net Income'] / df['Revenue']) * 100

df.groupby('Company')[['Debt Ratio', 'Profit Margin (%)']].mean()
```

Company	Debt Ratio	Profit Margin (%)
Apple	0.791534	25.364985
Microsoft	0.434442	34.041709
Tesla	0.376000	15.204736