SQL Project Origin

QUERY	*ANALYST INSIGHT*
Query #1: Revenue Growth YoY	Tesla grew revenue by over 16% YoY from 2022 to 2023, while Apple posted a steadier 7.95% gain. Both companies remained on an upward trajectory, but Tesla's growth was more aggressive, possibly due to expanding deliveries and improved volume.
Query #2: Net Margin %	In 2023, **Apple** continues to lead on profitability with a **net margin of 26.65%**, reflecting its dominance in high-margin product lines and operating efficiency. Despite a slight dip from the previous year (27.40%), its ability to retain over a quarter of its revenue as net income remains exceptional — a key strength for long-term value investors. **Tesla**, while growing top-line revenue by over 16%, maintained a relatively modest net margin of **8.51%**. This shows growth in volume, but with limited margin expansion, suggesting ongoing cost pressures or reinvestment into operations. **Netflix** posted a **12.5%** net margin in 2022, showing respectable profitability for a media business — indicating that its transition toward original content and pricing power may be translating into bottom-line gains.
Query #3: Return on Equity (ROE)	In 2023, **Apple** posted an ROE of **45.65%**, reflecting **exceptional capital efficiency**. For every £1 of shareholder equity, Apple returned nearly 46p in net income. This level of return is **well above industry benchmarks**, confirming Apple's dominance in both scale and profitability. **Tesla**, with an ROE of **17.78%** in 2023, delivered a solid return — especially for a company still scaling aggressively and investing in growth. It suggests that Tesla is becoming more capital efficient, even while navigating high production costs and expansion. **Netflix** reported an ROE of **13.79%** in 2022, respectable for a media and content-heavy company. However, it's slightly below the 15–25% range considered strong. This may point to lower leverage or a more conservative capital structure. Overall, Apple stands out as the **clear leader in capital productivity**, while Tesla shows **improving financial leverage** and Netflix maintains stable, though not extraordinary, efficiency.
Query #4: Debt-to-Equity (D/E)	In 2023, **Tesla** maintained a **debt-to-equity ratio of 1.22**, indicating that it uses **more debt than equity** to finance its assets. This level of leverage is typical for a high-growth company but suggests **moderate financial risk** if earnings drop or interest rates rise. Notably, Tesla has slightly deleveraged from the previous year (1.25), hinting at improved equity or debt reduction.

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In contrast, Apple maintains a more conservative capital structure, with a debt-to-equity ratio of 0.61 in 2023, up slightly from 0.59 in 2022. This signals that Apple has a strong equity cushion, giving it more flexibility and lower financial risk. It also reflects Apple's ability to self-finance and maintain excellent creditworthiness.
Overall, while both companies are financially healthy, Apple’s low leverage complements its high ROE, making it a model of capital efficiency and risk control. Tesla’s higher leverage supports its growth story, but also exposes it to more downside in stressed scenarios.
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<td>Query #5: Investment screening</td>
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Analyst Insight: 2023 Screening Results (ROE > 15%, Net Margin > 10%, D/E < 1.0)
In 2023, both Apple Inc. and Netflix Inc. meet the criteria for a high-quality equity screen:

Apple Inc. stands out with a net margin of 26.65%, an elite ROE of 45.65%, and a conservative debt-to-equity ratio of 0.61. These numbers suggest Apple is highly profitable, capital efficient, and financially stable — making it a textbook example of a fundamentally strong large-cap stock.
Netflix Inc., while smaller and in a different industry, also cleared the screen with a net margin of 13.89% and an ROE of 17.24%, indicating solid profitability and shareholder returns. Its low debt-to-equity ratio of 0.83 also suggests manageable financial risk, which is notable for a media/content-heavy firm.

These results show that, despite different business models, both companies demonstrate a healthy balance between profitability and financial stability — making them attractive from a fundamentals-first perspective.
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<h2>Schema SQL:</h2>
<pre>
-- Companies Table
CREATE TABLE companies (
  company_id INT PRIMARY KEY,
  company_name VARCHAR(100),
  sector VARCHAR(50)
);

INSERT INTO companies VALUES
(1, 'Tesla Inc.', 'Automotive'),
(2, 'Apple Inc.', 'Technology'),
(3, 'Netflix Inc.', 'Media'),
(4, 'Pfizer Inc.', 'Healthcare');
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<h2>Query SQL:</h2>
<pre>
SELECT
  company_id,
  fiscal_year,
  revenue,
  LAG(revenue) OVER (PARTITION BY company_id
ORDER BY fiscal_year) AS prev_revenue,
  ROUND(
    100.0 * (revenue - LAG(revenue) OVER (PARTITION
BY company_id ORDER BY fiscal_year))
    / LAG(revenue) OVER (PARTITION BY company_id
ORDER BY fiscal_year), 2
) AS revenue_growth_pct
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```sql
-- Income Statement Table
CREATE TABLE income_statement (
  company_id INT,
  fiscal_year INT,
  revenue DECIMAL(18,2),
  cogs DECIMAL(18,2),
  operating_expense DECIMAL(18,2),
  net_income DECIMAL(18,2)
);


INSERT INTO income_statement VALUES
(1, 2022, 81000000000, 55000000000, 12000000000,
7000000000),
(1, 2023, 94000000000, 61000000000, 13000000000,
8000000000),
(2, 2022, 365000000000, 212000000000,
95000000000, 100000000000),
(2, 2023, 394000000000, 220000000000,
98000000000, 105000000000),
(3, 2022, 32000000000, 16000000000, 9000000000,
4000000000),
(3, 2023, 36000000000, 18000000000, 9500000000,
5000000000),
(4, 2022, 85000000000, 43000000000, 12000000000,
8000000000),
(4, 2023, 87000000000, 44500000000, 12500000000,
8500000000);

-- Balance Sheet Table
CREATE TABLE balance_sheet (
  company_id INT,
  fiscal_year INT,
  total_assets DECIMAL(18,2),
  total_liabilities DECIMAL(18,2),
  shareholders_equity DECIMAL(18,2)
);

INSERT INTO balance_sheet VALUES
(1, 2022, 90000000000, 50000000000, 40000000000),
(1, 2023, 100000000000, 55000000000, 45000000000),
(2, 2022, 350000000000, 130000000000,
220000000000),
(2, 2023, 370000000000, 140000000000,
230000000000),
(3, 2022, 50000000000, 22000000000, 28000000000),
(3, 2023, 53000000000, 24000000000, 29000000000),
(4, 2022, 150000000000, 80000000000, 70000000000),
(4, 2023, 155000000000, 82000000000, 73000000000);
```

```sql
FROM income_statement;
SELECT
  company_id,
  fiscal_year,
  revenue,
  net_income,
  ROUND(100.0 * net_income / revenue, 2) AS
net_margin_pct
FROM income_statement;
SELECT
  i.company_id,
  i.fiscal_year,
  i.net_income,
  b.shareholders_equity,
  ROUND(100.0 * i.net_income /
b.shareholders_equity, 2) AS roe_pct
FROM income_statement i
JOIN balance_sheet b
  ON i.company_id = b.company_id AND i.fiscal_year
= b.fiscal_year;
SELECT
  company_id,
  fiscal_year,
  total_liabilities,
  shareholders_equity,
  ROUND(total_liabilities / shareholders_equity, 2) AS
debt_to_equity
FROM balance_sheet;
SELECT
  i.company_id,
  c.company_name,
  i.fiscal_year,
  ROUND(100.0 * i.net_income / i.revenue, 2) AS
net_margin_pct,
  ROUND(100.0 * i.net_income /
b.shareholders_equity, 2) AS roe_pct,
  ROUND(b.total_liabilities / b.shareholders_equity, 2)
AS debt_to_equity
FROM income_statement i
JOIN balance_sheet b
  ON i.company_id = b.company_id AND i.fiscal_year
= b.fiscal_year
JOIN companies c
  ON i.company_id = c.company_id
WHERE i.fiscal_year = 2023
  AND (i.net_income / i.revenue) > 0.10
  AND (i.net_income / b.shareholders_equity) > 0.15
  AND (b.total_liabilities / b.shareholders_equity) <
1.0;
```