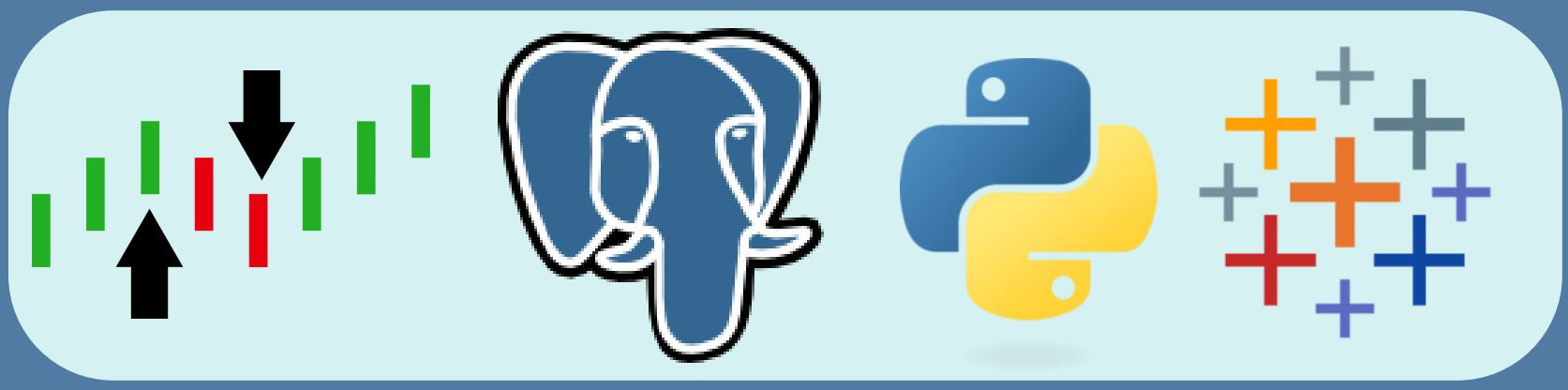
SQL-Driven Stock Market Analytics: 70+ US Tickers & Custom ETF Simulation

Insights on sectors, volatility, & Fed Decision



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Goal: Analyze 70+ stocks across 7 sectors (1 year) using SQL & Tableau.

- ✅ Simulated $10K ETF across sectors
- ✅ Custom ETFs vs S&P500, NASDAQ, Dow
- ✅ Detected trends & Fed Rate impact

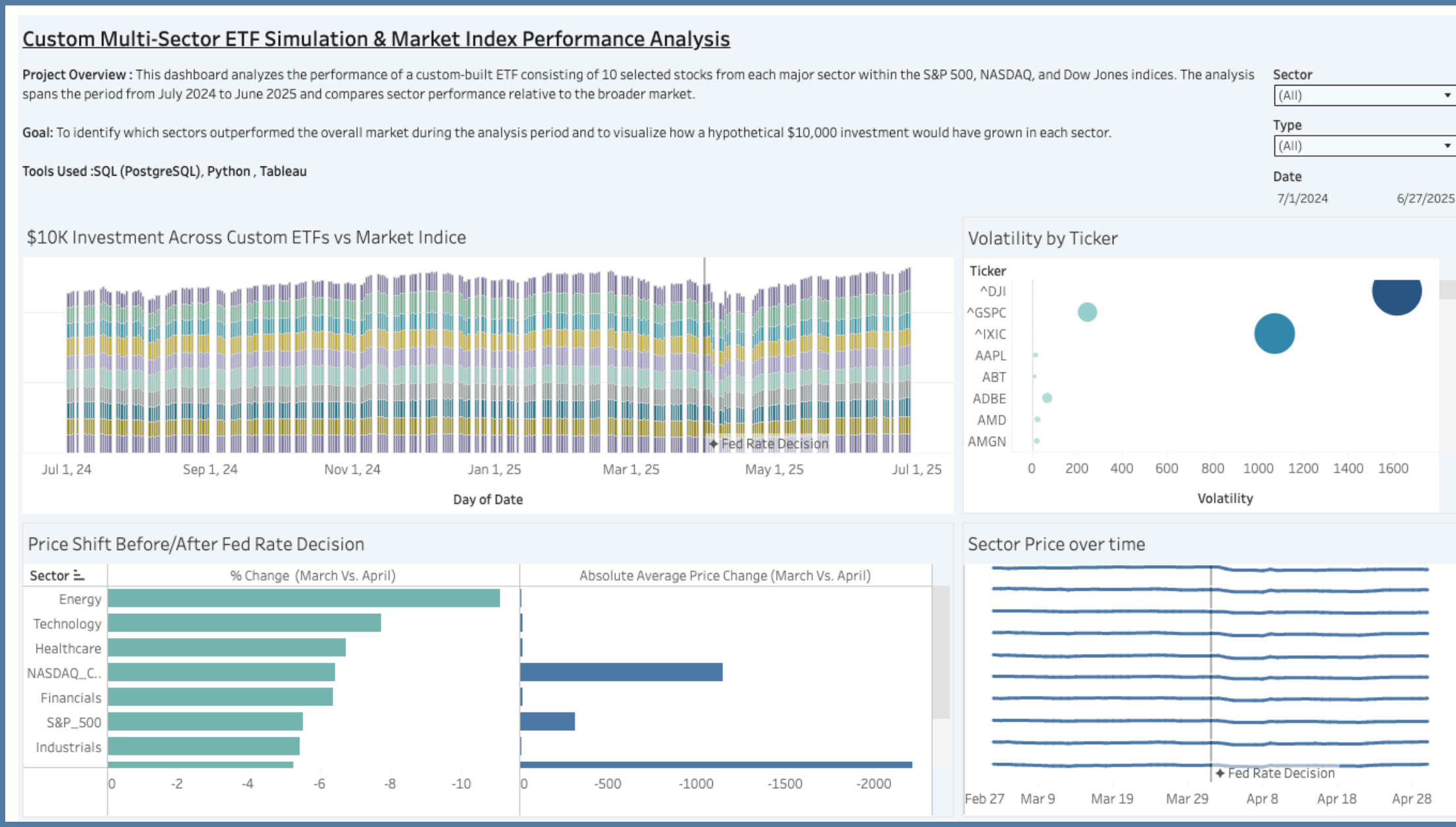
BEST Sector:
Communication Services
+38%

WORST Sector:
Energy -9%

ETF vs S&P 500:
Outperformed by 11%

Fed Rate Impact:
All sectors dipped in April

Interactive Tableau Dashboard



Dashboard Link

Volatility Across Stocks and Indices

```
SELECT
  ticker,
  ROUND(STDDEV(adj_close)::NUMERIC, 2) AS volatility
FROM stock_prices
GROUP BY ticker
ORDER BY volatility DESC
LIMIT 10;
```

ticker	volatility
^DJI	1616.99
^IXIC	1074.93
BKNG	583.63
^GSPC	245.56
NFLX	187.18
UNH	91.35
BLK	71.69
TMO	69.81
TSLA	69.65
ADBE	67.16
META	66.70

The result shows Violatility of the stocks and indices across the year

Stocks Growth Rate from July 2024 to June 2025

```
WITH first_last AS (
  SELECT
    ticker,
    FIRST_VALUE(adj_close) OVER (PARTITION BY ticker
ORDER BY date ASC
      ROWS BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED
FOLLOWING) AS first_price,
    LAST_VALUE(adj_close) OVER (PARTITION BY ticker ORDER
BY date
      ROWS BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED
FOLLOWING) AS last_price
  FROM stock_prices
)
  SELECT DISTINCT
    ticker,
    ROUND(((last_price - first_price) / first_price *
100)::numeric, 2) as return_pct
  FROM first_last
order by return_pct;
```

ticker	pct_return
UNH	-36.33
MRK	-36.07
.....	
NFLX	96.42
RCL	99.99

Fed Rate Policy Analysis

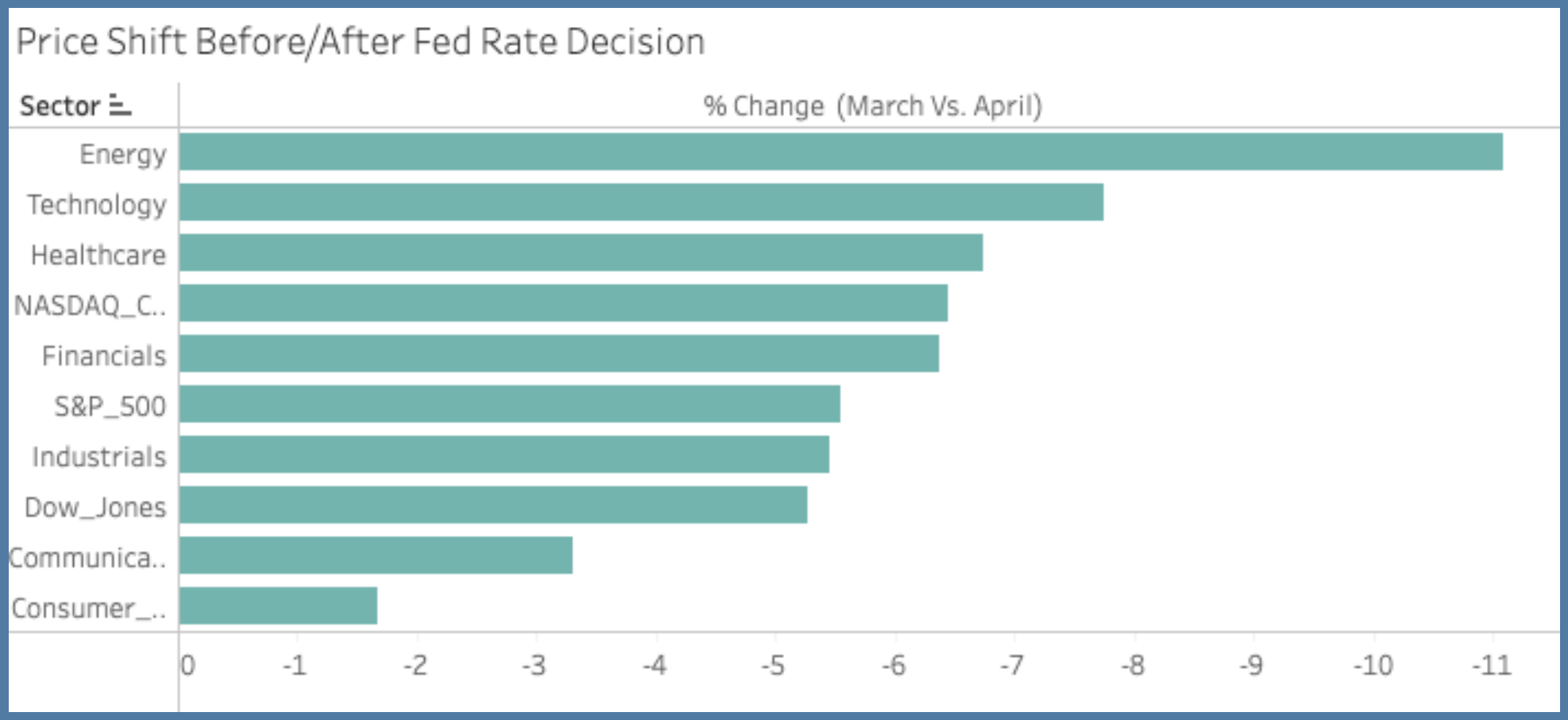
```
<SELECT
  tm.sector,
  ROUND((AVG(sp.adj_close) FILTER (WHERE sp.date BETWEEN
'2025-03-01' AND '2025-03-31'))::numeric, 2) AS
avg_march,
  ROUND((AVG(sp.adj_close) FILTER (WHERE sp.date BETWEEN
'2025-04-01' AND '2025-04-30'))::numeric, 2) AS
avg_april,
  ROUND((
    AVG(sp.adj_close) FILTER (WHERE sp.date BETWEEN
'2025-04-01' AND '2025-04-30') -
    AVG(sp.adj_close) FILTER (WHERE sp.date BETWEEN
'2025-03-01' AND '2025-03-31'))::numeric,
  2) AS diff,
  CASE
    WHEN AVG(sp.adj_close) FILTER (WHERE sp.date BETWEEN
'2025-04-01' AND '2025-04-30') >
         AVG(sp.adj_close) FILTER (WHERE sp.date BETWEEN
'2025-03-01' AND '2025-03-31')
    THEN 'Positive Trend'
    ELSE 'Negative Trend'
  END AS price_trend
FROM stock_prices sp
JOIN ticker_metadata tm ON sp.ticker = tm.ticker
GROUP BY tm.sector
ORDER BY diff DESC;>
```

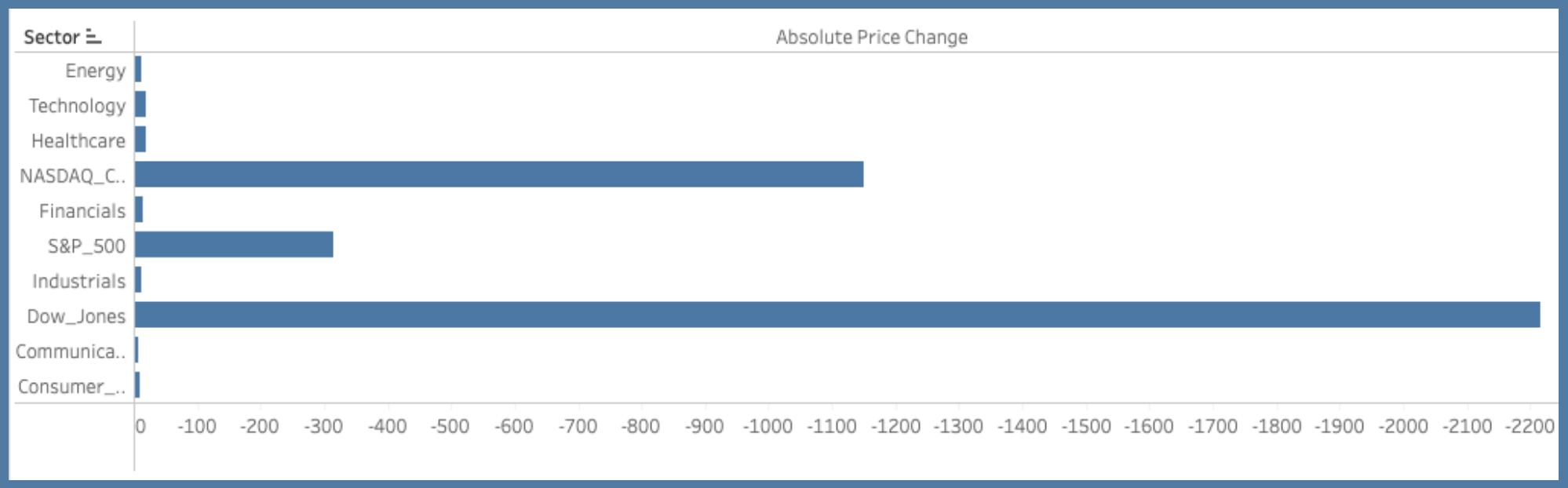
Fed Rate Policy Analysis

Absolute Average Price Change

sector	avg_march	avg_april	diff	price_trend
Communication_Services	253.50	245.14	-8.36	Negative Trend
Consumer_Discretionary	646.52	635.75	-10.77	Negative Trend
Energy	101.59	90.34	-11.26	Negative Trend
Industrials	226.46	214.13	-12.32	Negative Trend
Financials	242.59	227.13	-15.46	Negative Trend
Healthcare	270.35	252.13	-18.22	Negative Trend
Technology	261.75	241.47	-20.28	Negative Trend
S&P_500	5683.98	5369.50	-314.49	Negative Trend
NASDAQ_Composite	17828.03	16678.46	-1149.57	Negative Trend
Dow_Jones	42092.13	39876.33	-2215.80	Negative Trend

Fed Rate Policy Analysis





Key Takeaways

✅ SQL :

- Leveraged advanced window functions, aggregations, and CTEs to uncover sector trends, volatility, and performance drivers.

✅ Dynamic Dashboard:

- Transformed raw analytics into interactive Tableau visuals, enabling sector-wise insights and investment simulations.

✅ Investment Insights:

- Built a simulated ETF that beat major indices, revealed top and bottom-performing sectors, and measured event impacts (e.g., Fed Rate Decision).

Next Steps

Interested in collaborating or learning more?

👉 Check out the full project on GitHub (link), Tableau Public (link)

👉 Let’s connect and discuss investment analytics!

Linkedin