STOCK MARKET DATA ANALYSIS DASHBOARD IN POWER BI

TABEL OF CONTENT

1. Project Objective

The goal was to design a **Power BI dashboard** that provides insights into NIFTY50 companies, including:

- Market capitalization trends
- Sector performance
- Top gainers and losers
- Dividend yields and corporate actions (splits/dividends)
- Interactive filters for period, sector, and company

This dashboard helps analysts and investors quickly understand market dynamics and company-level performance.

2. Data Sources

- **NIFTY50_Master_Price.csv** → Daily stock prices (Open, High, Low, Close, Volume).
- **NIFTY50_Master__Events.csv** → Corporate events (Dividends, Splits).
- **NIFTY50_Master_Info_Events.xlsx.csv** → Company metadata (Name, Sector, Industry, MarketCap, PE Ratio, Business Summary).

3. Data Preparation (ETL in Power Query)

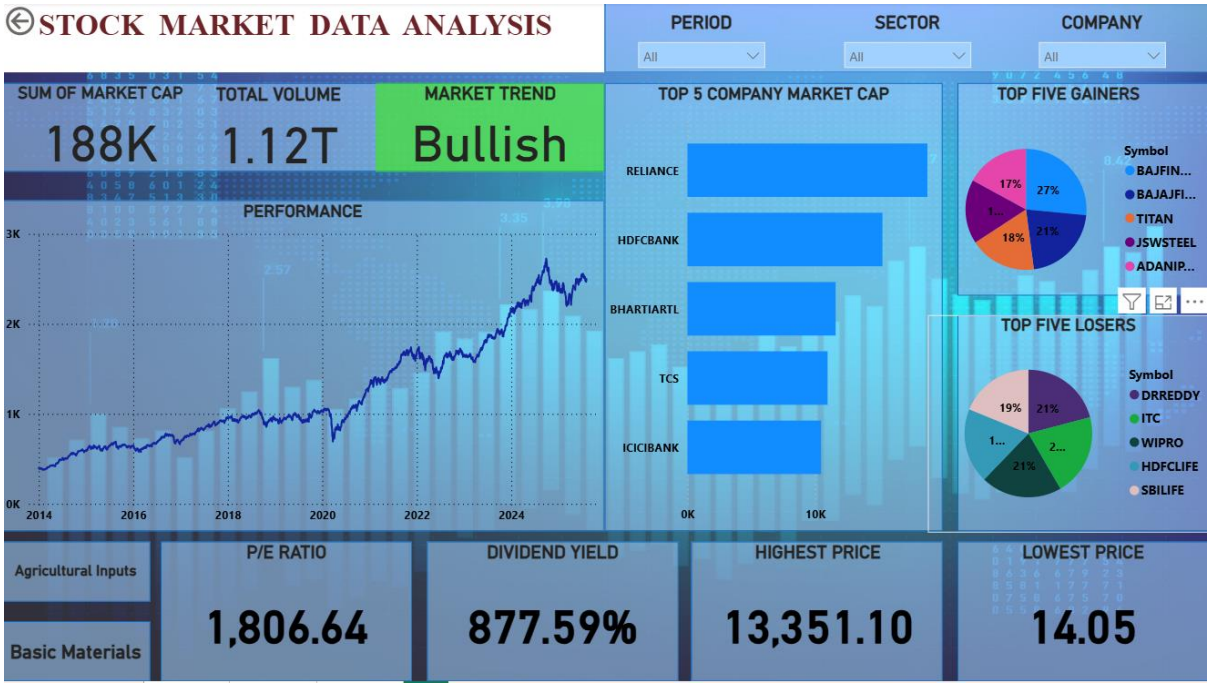
- **Cleaning**
    - Standardized date formats (dd-MM-yyyy → Date type).
    - Trimmed and uppercased Symbol fields to ensure consistent joins.
    - Converted numeric text to decimal values (MarketCap, PE Ratio).
- **Transformations**
    - Created a **Date table** for time intelligence (Year, Month, Quarter).
    - Built an **adjustment factor** for stock splits to normalize historical prices.
    - Aggregated dividends to calculate **Dividend Yield (TTM)**.
- **Modeling**
    - Fact tables: Prices, Events.
    - Dimension tables: Companies, Date.
    - Relationships: Symbol and Date across tables.

4. Dashboard Design

- **KPIs**
    - Total Market Cap
    - Sum of Market Cap (selected companies)
    - Market Trend (Bullish/Bearish indicator)
- **Visuals**
    - Line chart → Market performance trend.
    - Bar chart → Top 5 companies by Market Cap.
    - Pie charts → Top 5 gainers and losers.
    - Cards → Highest & lowest price, PE ratio, dividend yield

- **Filters**

- Period (1M, 3M, 6M, YTD).
- Sector.
- Company.



5. Challenges & Solutions

Challenge	Struggle Faced	Solution
Large Price CSV	File too big to load directly	Used incremental load (split by year) and optimized queries.
Date Format Issues	Different formats caused errors	Standardized all dates in Power Query.
Corporate Actions	Splits/dividends not reflected in raw prices	Built adjustment factors and dividend yield measures.
Symbol Mismatches	Joins failed due to inconsistent naming	Cleaned symbols (Trim, Upper) and created mapping table.
MarketCap Units	Inconsistent scales (K, M, T)	Normalized to rupees and applied formatting.

6. Key Learnings

- Handling **large datasets** in Power BI requires incremental refresh and aggregation.

- **Corporate actions** (splits/dividends) must be adjusted for accurate analysis.
- Clean **data modeling** (Fact/Dim tables) makes DAX simpler and visuals faster.
- Dashboard storytelling improves when KPIs are **clear, color-coded, and interactive**.