



**PROJECT TITLE:**

**Stock Price Trend & Technical Indicator Dashboard**

Created by: Santhoshkumar H P

Tools Used: Python (yfinance, pandas), Tableau

Data Source: Yahoo Finance (AAPL - Apple Inc.)

## **OBJECTIVE:**

To analyze the stock price movements of Apple Inc. (AAPL) using historical data and key technical indicators, and present insights in an interactive Tableau dashboard.

## **KEY GOALS:**

- Visualize the trend of stock prices over time
- Apply and interpret technical indicators (SMA, EMA, Bollinger Bands, RSI)
- Enable better understanding of stock behavior using visual analytics

## **DATA SOURCE:**

- Yahoo Finance (using Python yfinance API)
- Data range: Last 1 year (adjustable)

## **TOOLS & TECHNOLOGIES:**

- Python (pandas, yfinance)
- Tableau Desktop
- Jupyter Notebook (data cleaning & transformation)

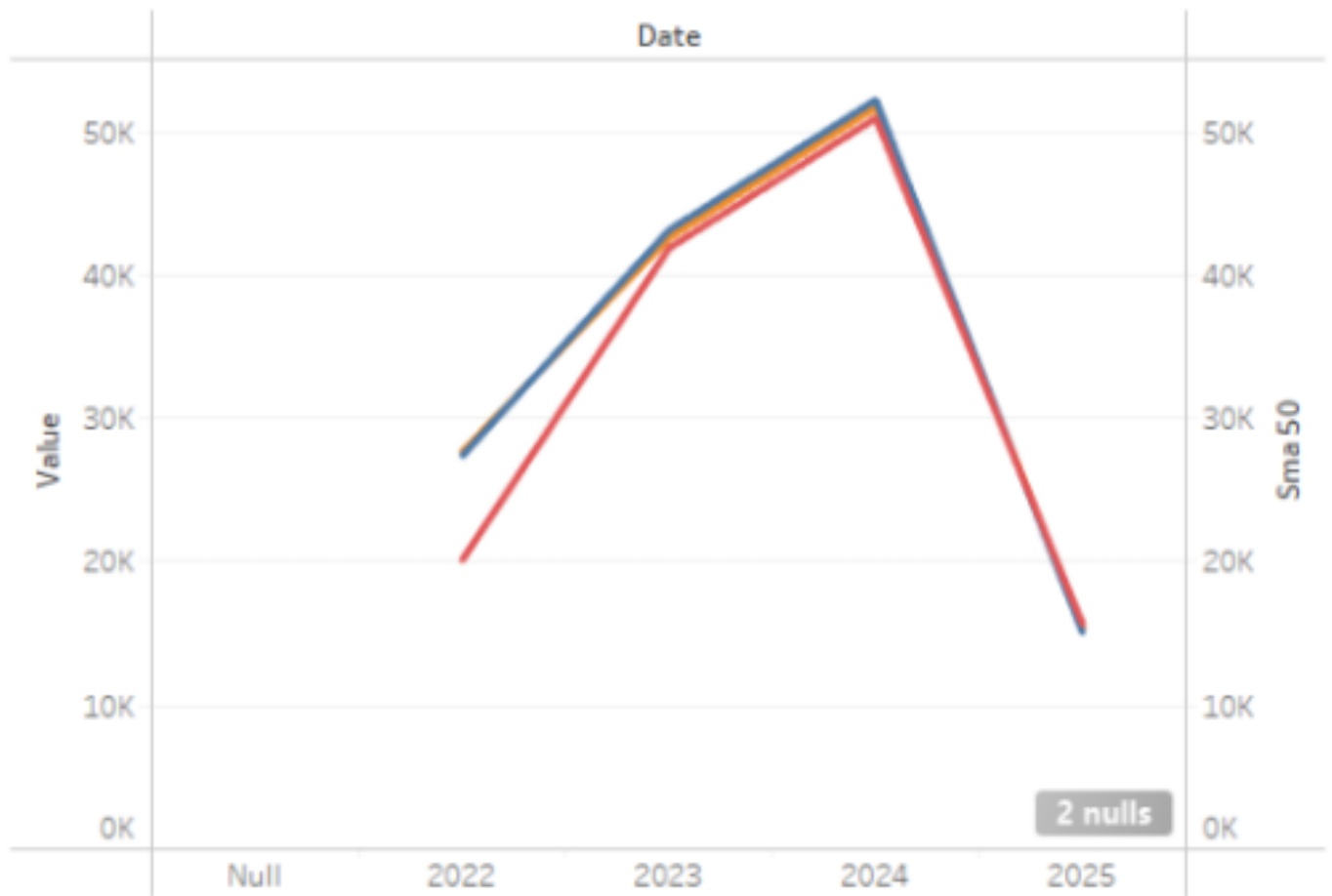
## **Technical Indicators Used**

1. Simple Moving Average (SMA)
  - 20-day average closing price

## 2. Exponential Moving Average (EMA)

- 20-day average giving more weight to recent prices

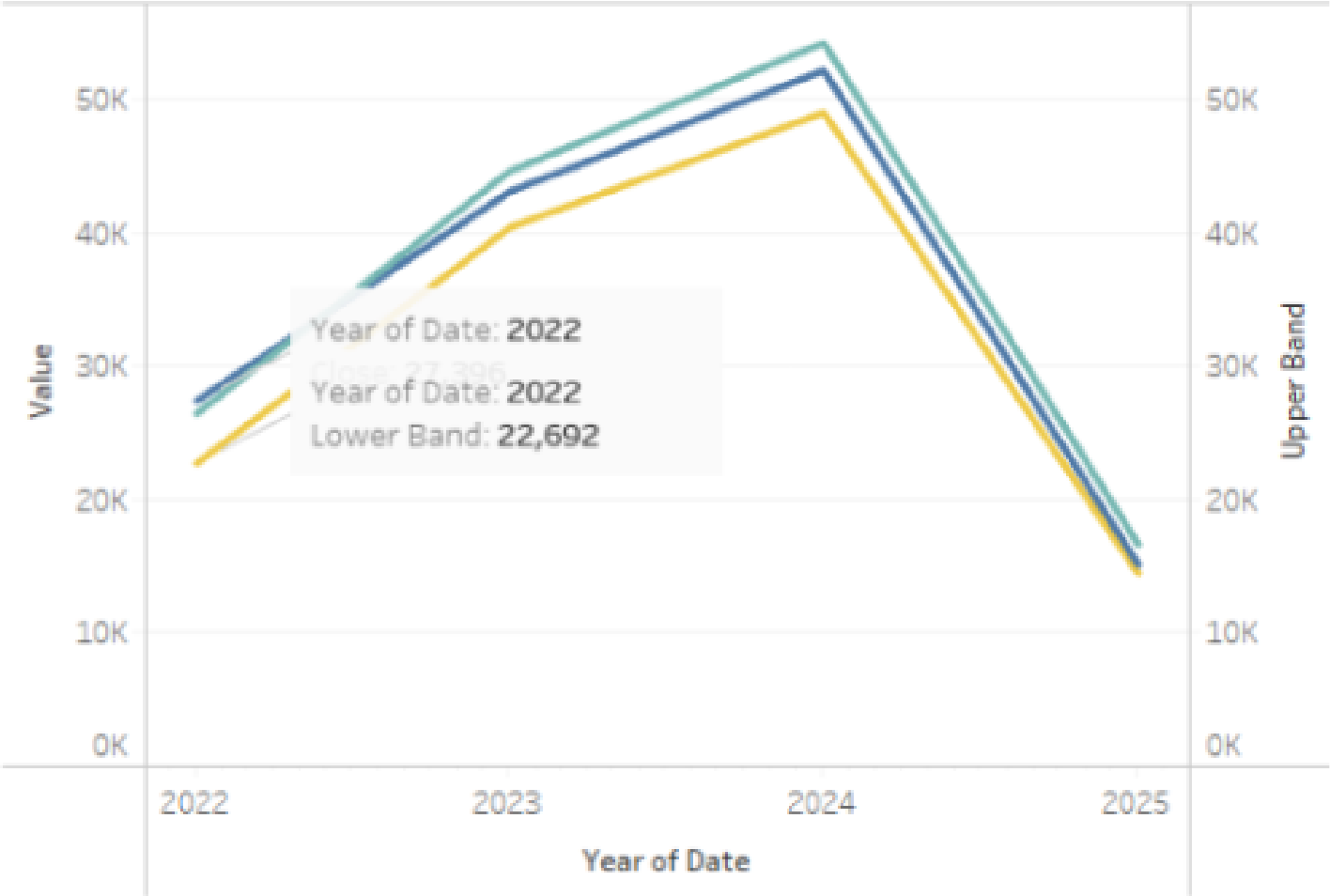
Stock Price with SMA and EMA



## 3. Bollinger Bands

- $SMA \pm 2 \times \text{standard deviation}$  to show volatility range

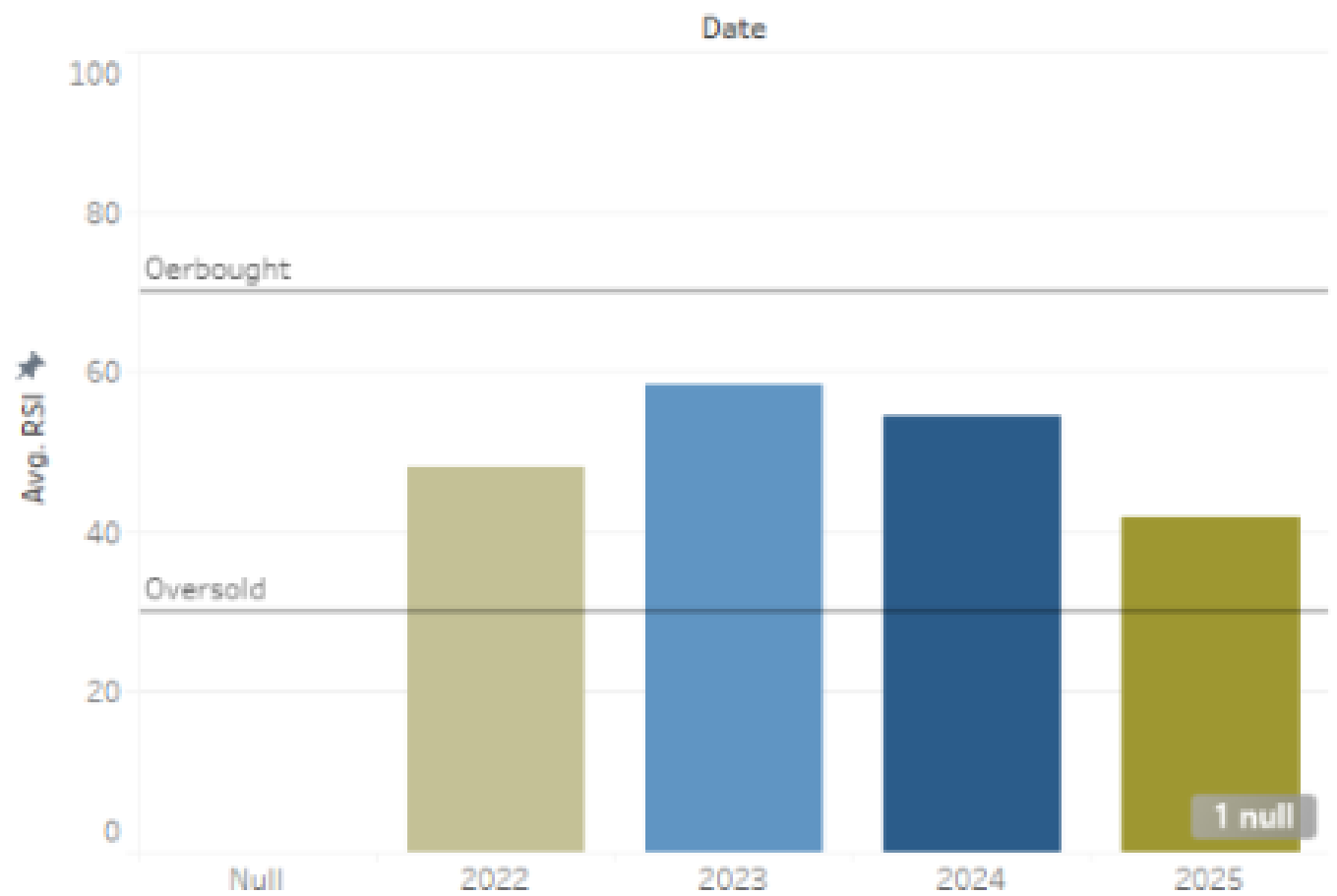
# Bollinger Band



## 4. Relative Strength Index (RSI)

- Momentum oscillator measuring overbought/oversold conditions

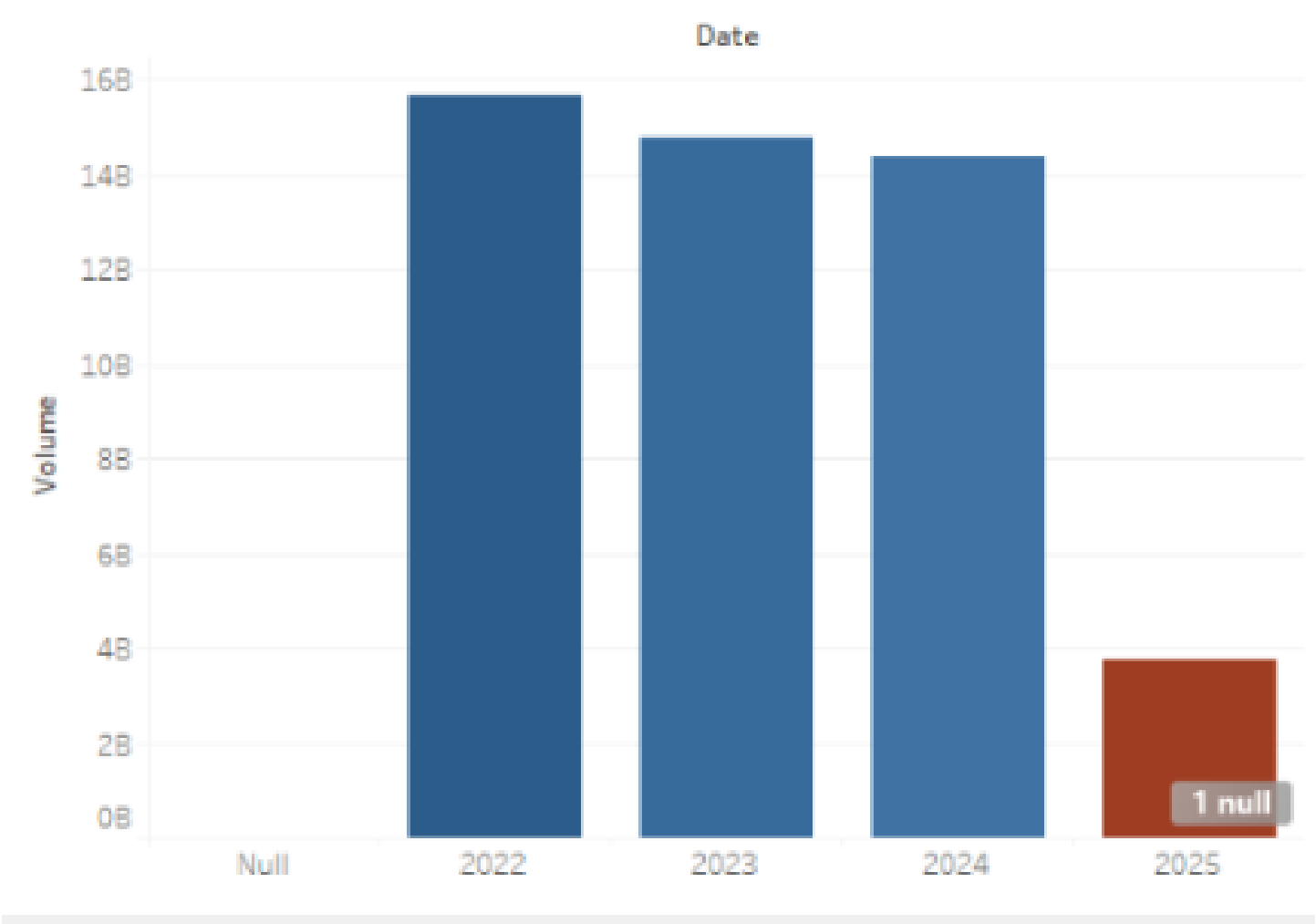
## RSI



### 5. Volume

- Daily trading volume to show investor activity

# Show Trading Volume Over Time

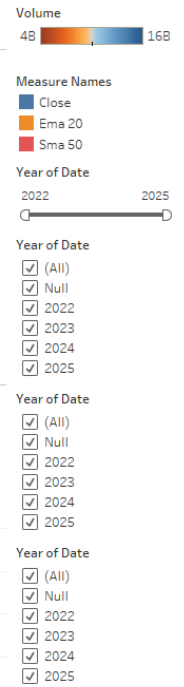
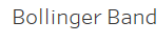


## DASHBOARD SECTIONS:

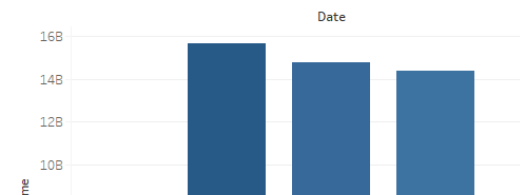
- Price Chart with SMA & EMA (Dual Axis)
- Bollinger Bands with price range visualization
- RSI Indicator (0–100 scale with 30 and 70 reference lines)
- Volume Chart showing daily activity

Each section helps in interpreting stock trends, momentum, and potential entry/exit signals.

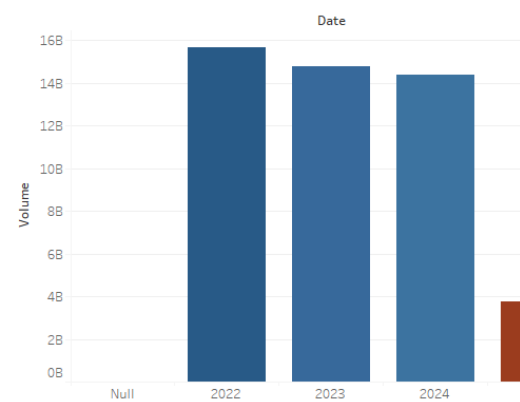
## Stock Price with SMA and EMA



### Show Trading Volume Over Time



### Show Trading Volume Over Time



## KEY INSIGHTS:

- SMA and EMA crossover moments indicate trend reversals
- Bollinger Band squeeze observed in [Month] indicates potential breakout
- RSI dropped below 30 during [Month] suggesting oversold zone
- Spikes in volume during [event or month] indicate high market interest

The dashboard helps visualize these signals in an intuitive way for decision-making.

## **CONCLUSION:**

This project demonstrates how stock data and technical indicators can be combined into an interactive dashboard for insightful financial analysis.

## **FUTURE SCOPE:**

- Add support for multiple stocks
- Include more indicators like MACD, VWAP
- Enable real-time updates using live data
- Deploy dashboard on web using Tableau Public

This analysis can support traders, analysts, and learners in making informed stock decisions.

**This dashboard was created using real-time stock data and showcases a professional approach to technical analysis in financial markets using data visualization tools.**

## **Thank You!**

Created by: Santhoshkumar H P

### Portfolio

GitHub: <https://github.com/SanthoshkumarHP1>

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