Twitter Stock Market Analysis – Project Report

# 1. Introduction

Twitter, a leading social media platform, has experienced a dynamic journey in the stock market from its IPO in 2013 to its delisting in 2022. This project analyzes the stock performance of Twitter over this time period, using data analysis techniques and visualization tools.

# 2. Methodology

- Tools Used: Python (Pandas, NumPy, Matplotlib, Seaborn, SciPy), Power BI  
- Approach:  
 - Data Loading and Cleaning  
 - Statistical Analysis (T-test, Z-test, Chi-Square Test)  
 - Time Series Visualization  
 - Interactive Dashboard Creation  
 - Insights Extraction

# 3. Requirement Analysis

- Data Source: Stock market data for Twitter from 2013 to 2022  
- Key Fields:  
 - Date, Open, High, Low, Close, Volume  
- Objectives:  
 - Understand Twitter's market behavior  
 - Perform statistical testing  
 - Build visual tools for client presentation

# 4. Other Parameters Depending Upon the Project

- Missing Values: Checked and handled using dropna()  
- Statistical Description: Mean, Median, Std Dev analyzed for stock price columns  
- Statistical Tests:  
 - Z-test and T-test on High, Low, Close  
 - Chi-square test for independence  
- Findings:  
 - Trends and anomalies across different market phases  
 - Time-bound patterns and significant events reflected in stock prices

# 5. All Visualizations (From Dashboards and Python Notebook)

- Line Graph: Stock price trends (Close vs Date)  
- Bar/Scatter Plot: Comparative views across time periods  
- Buttons for Time Filter: Visual filters to explore trends in specific ranges  
- Word Cloud: Key insights and frequent terms from analysis  
- Power BI Dashboard: Interactive visuals showing high, low, and closing prices with date controls

# 6. Insights from the Analysis

- Stock Trends:  
 - Peaks in 2014 and 2021  
 - Decline leading up to delisting in 2022  
- Statistical Inferences:  
 - T-tests showed significant differences between means  
 - Chi-square test confirmed interdependence between features  
- Market Behavior:  
 - Major spikes correlate with company announcements and global events  
- Final Conclusion:  
 - Twitter stock demonstrated volatility, with specific windows of opportunity for short- and long-term investors