Project Statement

Domain: Data Analytics

Project 5: Real-Time Share Price Scraping and Analysis
Project Title: Real-Time Share Price Scraping and Analysis

Project Objective:
The project aims to fetch and analyze real-time stock prices to understand market behavior, trends, and volatility. Using APIs like Alpha Vantage or Yahoo Finance, it enables time-series analysis, visualization of price movements, comparison of multiple stocks, and generation of actionable insights for traders and financial analysts.

Technologies to Use:

- Python – Core programming language for data processing
- Jupyter Notebook – Interactive development and visualization
- Pandas & NumPy – Data manipulation and numerical analysis
- Matplotlib & Seaborn – Data visualization
- yfinance / Alpha Vantage API – Real-time stock data extraction
- Requests & JSON – API handling and data parsing

Dataset

- Source: Real-time stock data from APIs like Alpha Vantage, Yahoo Finance (yfinance), or IEX Cloud.
- Columns: Date/Time, Open, High, Low, Close, Adjusted Close, Volume.
- Optional Historical Data: Download CSV datasets from Kaggle or Quandl for backtesting.

Tasks:

- Setup Python environment and install necessary libraries.
- Connect to stock APIs to fetch real-time price data.
- Clean and preprocess the data using Pandas.
- Perform time-series analysis (moving averages, trends, volatility).
- Visualize stock trends and patterns using Matplotlib/Seaborn.
- Compare multiple stocks and identify correlations.
- Optionally, save cleaned data to CSV or database for further analysis.
- Document findings and insights for market behavior understanding.

Submission:
Submit the project folder in ZIP file, including .ipynb notebook file or .py script file. The ZIP will includes all files that used to create the project and Project Report PDF file with graphs and charts.