DynamicStock Agent NSE — Documentation

# 1. Business Problem 🎯

Investors and portfolio managers are constantly seeking stocks that have undergone significant price changes over a medium-term horizon (~6 months) to identify potential opportunities:

- Risers: Stocks that rose >50% could be momentum plays, indicating strong fundamentals or investor interest.  
- Fallers: Stocks that dropped >50% could be distressed, presenting either risks or value buying opportunities.

Problem:  
There is no simple, free, real-time consolidated system that fetches:  
- All active NSE-listed stocks  
- Current and 6-month-old stock prices  
- Calculates percentage change  
- Exports clean reports for analysis

# 2. Use Case 💼

| Stakeholder | Use Case |  
|:-------------------|:------------------------------------------------|  
| Investors | Identify high-growth or deep-fall stocks |  
| Portfolio Managers | Rebalancing portfolios based on momentum |  
| Analysts | Track significant movers in the stock market |  
| Trading Bots | Feed shortlisted stocks for algorithmic trading |

# 3. Data Source 🌐

- Stock Listings:  
 https://archives.nseindia.com/content/equities/EQUITY\_L.csv  
 ➔ Live list of all actively listed NSE companies.

- Stock Price Data:  
 Yahoo Finance API via yfinance Python package.  
 ➔ Used to fetch historical and real-time stock prices.

# 4. Methodology ⚙️

Step 1: Fetch All Active Stocks  
- Download latest list of active NSE stocks.  
- Extract Ticker and Company Name.

Step 2: Get Stock Prices  
- Modify ticker to TICKER.NS format.  
- Fetch Current closing price and Past (180 days ago) closing price.

Step 3: Calculate % Change  
% Change = ((Current Price - Past Price) / Past Price) \* 100

Step 4: Filtering Stocks  
- Stocks with > +50% rise  
- Stocks with < -50% drop

Step 5: Export Results  
- Export all stocks, risers, and fallers to CSV and Excel files.

# 5. Sample Data 📊

Total Stocks Fetched In NSE: 2081

# of < -50% Drop in price= 44 stocks

Top 10 Stocks with < -50% Drop (Sample):  


Note: .NS stands for NSE stocks

# 6. Summary 🧠

| Aspect | Detail |  
|:---------------|:------------------------------------|  
| Agent Name | DynamicStock Agent v2 |  
| Market | NSE (India) |  
| Timeline | Real-time current price, ~6 months |  
| Analysis Type | % Price Change Over 6 Months |  
| Export Formats | CSV and Excel |  
| Tech Stack | Python, Pandas, Requests, YFinance |  
| Highlights | Batch fetching, multithreaded |

# Final Notes:

- Fully Automated  
- Official Data Sources  
- Very Low-Cost Infrastructure  
- Extendable for future features like:  
 - Sector analysis  
 - Multi-year analysis  
 - Volume-based filtering  
 - Scheduled email reports