**AI Investor Agent — Complete Workflow**

**Goal**: Given a user query (e.g., "Where to invest: Apple or Nestlé"), the agent recommends the best stock based on market trends and fundamentals, and generates a structured investment report.

1. **User Query Input**

* User enters a query like:

Where to invest: Apple or Nestlé

1. **Stock Symbol Resolution**

* Extract valid company names from the query.
* Map company names to stock ticker symbols using a company–ticker mapping tool or keyword search.

Example:"Apple" → AAPL, "Nestlé" → NESN.SW

1. **Market Analyst Agent**

* Purpose: Analyze the recent stock performance (6 months).
* Tools used: yfinance, StockPerformanceFetcher
* Steps:

Fetch historical stock data.

Calculate return percentage for each ticker.

Example Output: AAPL: +8.2%, NESN.SW: +2.5%

**4. Company Researcher Agent**

* Purpose: Gather company fundamentals and recent news.
* Tools used: get\_company\_info, get\_company\_news
* Steps:

Use yfinance to get:

Company Name, Sector, Market Cap, Business Summary

**5. Stock Strategist Agent**

* Purpose: Recommend the better stock to invest in.
* Input:

Market performance data

Company profiles

* Action:

Uses LLM (LLaMA 3.3 70B via Groq) to analyze and reason.

* Output:

Example: "Invest in AAPL because it has stronger recent returns and strong fundamentals..."

**6. Team Lead Agent**

* Purpose: Compile all insights into a final structured investment report.
* Input:

Market analysis summary

Company research results

Recommendation from strategist

* Output:

Final Report with:

Stock Performance Summary

Key Company Insights

Risk–Reward Analysis

Final Recommendation

Stock Ranking

**7. Final Output to User**

* Shows:

Human-readable investment report

Clear ranked recommendation

* Example:

Final Recommendation: Invest in AAPL

Stock Ranking: AAPL > NESN.SW

**Tech Stack Summary**

|  |  |
| --- | --- |
| Component | Tool/Lib |
| LLM | LLaMA 3.3-70B (via Groq) |
| Agents | LangChain Zero-Shot Agents |
| Ticker Data | yfinance |
| News | yfinance.news |
| Env | .env + dotenv |
| Logs | logging |