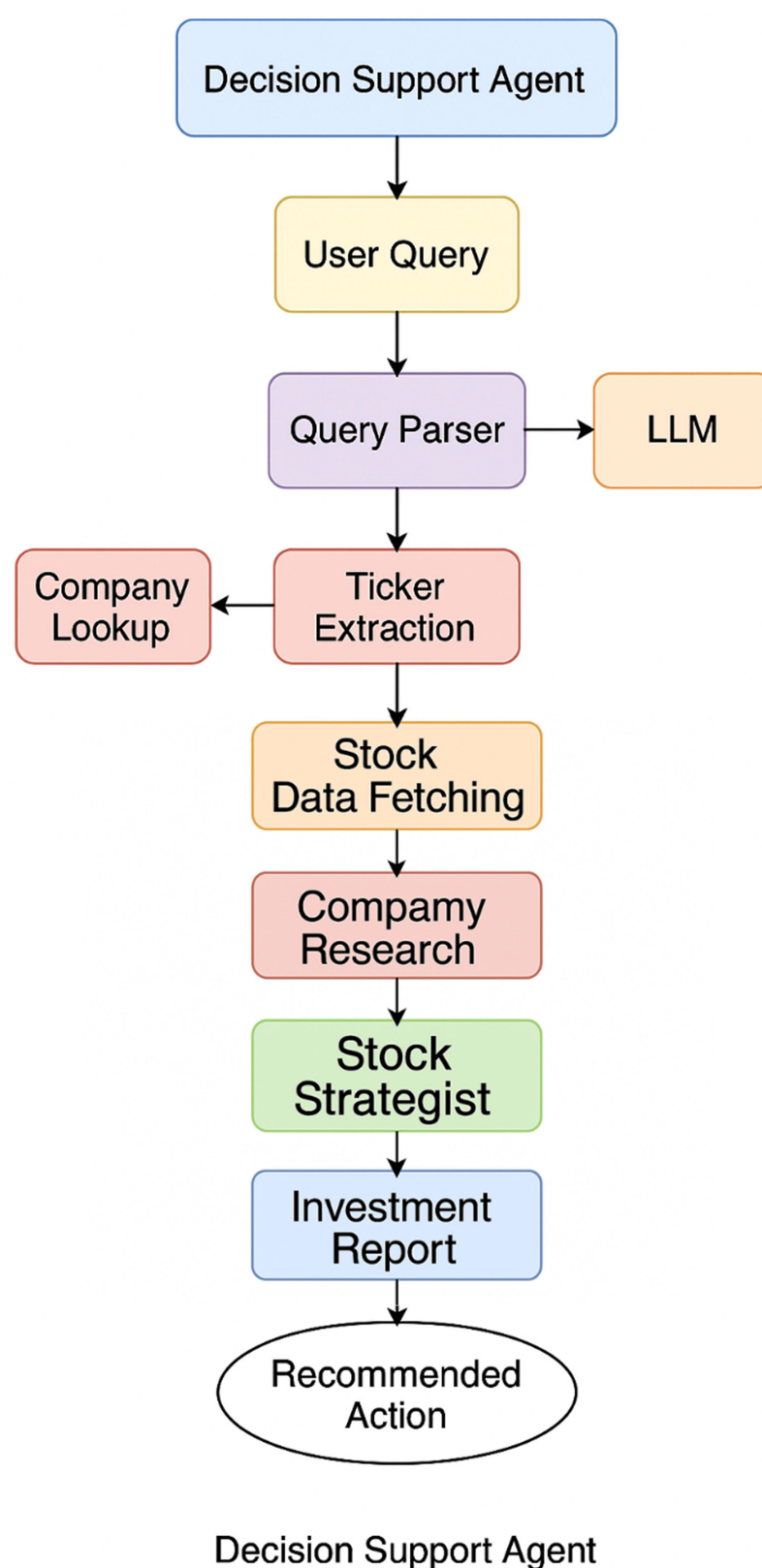# AI Investor Agent — Complete Workflow

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.

Decision Support Agent

1. User Query Input
- User enters a query like:

Where to invest: Apple or Nestlé

2. 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

3. 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