

```

dynamics, price fluctuations of key
materials (e.g., lithium, batteries)
- Macroeconomic factors: macroeconomy
, Federal Reserve policies, interest
rates, inflation, employment,
consumer spending, GDP growth,
manufacturing indices, PMI, retail
sales, and other macroeconomic
indicators
- Financial market sentiment:
significant fluctuations or sustained
trends in the S&P 500, Nasdaq, Dow
Jones indices; market overheating,
overbought conditions, or panic
selling that may affect overall risk
appetite; valuation adjustments in
tech/growth stock sectors; market
rotation; financing environment; IPO
activities; large ETF inflows or
outflows
- Policies and regulations: national
policies, taxation, regulation,
energy, climate, green transition,
green energy subsidies, emission
standards, electric vehicle
regulations; US-China trade war,
export restrictions, chip bans,
customs policies, etc.
- US-China relations, export controls
, trade wars, tariff adjustments,
technology bans
- Geopolitical conflicts (e.g.,
Russia-Ukraine war, Middle East
tensions), international sanctions,
energy price surges causing global
market volatility or disruptions in
energy/logistics/supply chains
- Key figures (e.g., Trump, Biden,
Federal Reserve Chair Powell) making
political, economic, or policy
statements, policy preferences,
election outlooks, trade comments, or
antitrust remarks
3. If the news is **not substantively
related** to the company and is **unlikely to impact** its operations or
stock price -- classify as **none**,
such as:
- Natural disasters, entertainment
gossip, or local events unrelated to
the company's business, industry, or
market
- Regional incidents with no
significant impact on the company's
country's economy or policies

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News article:  
{agent\_scratch}  
Please output only the response in JSON
format without any additional commentary  
:  
{response\_format\_prompt}

```

response_format_prompt = """Please
output a JSON in the following format:
{
  "relation_type": "direct" | "indirect"
  | "none",
  "reason": "Briefly explain the
  reasoning behind your judgment"
}
"""

```

```

}
"""

```

#### System

**Prompt:** You are a professional financial analyst specializing in evaluating the medium- to long-term impact of financial news on company stock prices. You are assisting an intelligent trading agent with decision-making support. You have received the following financial news:  
"{agent\_scratch}"  
The target company is: {symbol}

Please complete the following tasks:  
1. Do \*\*not\*\* repeat or summarize the
original news content;  
2. Determine whether this news has a \*\*material impact\*\* on {symbol}'s stock
price, not limited to direct relevance - -
please also consider macroeconomic
policy, supply chain dynamics, market
sentiment, geopolitical risks, or other
indirect or lagging factors;  
3. If there is an impact, provide \*\*one
clear and concise investment insight\*\*,
explaining how the news might affect {symbol}'s stock price in the coming \*\*weeks to months\*\* (e.g., bullish or
bearish);  
4. If there is \*\*no clear relevance or
impact\*\*, clearly state that the news
has \*\*no significant effect\*\* on {symbol}
};  
5. Evaluate the relevance level of the
news to {symbol}, using the following
scale:

"high": The news has a direct and
significant impact on the company's
fundamentals, financials, regulatory
environment, or industry position;  
"medium": The news could have an
indirect or delayed impact, such as
through macroeconomic trends,
industry supply/demand shifts,
investor sentiment, or cost
structure changes;  
"low": The news is largely unrelated
or only remotely connected to the
company.

Please output only the response in JSON
format without any additional commentary
:  
{response\_format\_prompt}

```

response_format_prompt = """Please
respond using the following JSON format
and do not include any additional text:
{
  "insight": "Summary of how this news
  may impact {symbol}",
  "relevance": "high" | "medium" | "low"
}
"""

```

#### A.1.4 company news

Since company-specific news can be directly collected by ticker symbol, the filtering process fo-

cuses primarily on assessing \*\*relevance, materiality, and potential market impact\*\*, rather than broad topic association. Two prompt templates are used in this module - one for filtering and ranking important news items, and the other for analyzing their short-term and medium-to-long-term effects on stock performance.

**System Prompt:** You are a professional financial analyst. Your task is to filter and prioritize firm-level news items based on their potential importance to investors and their relevance to the company's stock price. You have received several pieces of company-related news for {symbol}: "{news\_batch}"

Please complete the following steps:  
 1. Identify which items are \*\*material\*\* and likely to influence investor perception or price movement;  
 2. Filter out minor, repetitive, or purely descriptive updates with limited market relevance;  
 3. Rank the retained items by their expected significance to the stock price, considering tone, topic, and potential investor reaction.

Please return the result strictly in JSON format:

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{
  "key_points": "Selected and ranked company news items that are most likely to affect {symbol}'s stock price.",
  "reason": "Explain briefly why these items are more significant than others."
}
```

**System Prompt:** You are a professional financial analyst specializing in assessing the \*\*price sensitivity\*\* of company-related news. You are assisting a high-performance trading agent that only acts based on material, relevant information.

Here is a piece of news you received:  
 "{agent\_scratch}"  
 Target company: {symbol}

Please follow these instructions:  
 1. Do NOT summarize the news content;  
 2. Focus ONLY on the potential impact of this news on {symbol}'s stock price;  
 3. If this news is irrelevant or has no clear directional impact on {symbol}, clearly mark it as \*\*"neutral"\*\* with an appropriate reason;  
 4. Evaluate the likely impact in both:  
     - \*\*Short term\*\* (1-5 trading days)  
     - \*\*Medium to long term\*\* (a few weeks to months);  
 5. Be strict: only assign "positive" or "negative" if the news provides clear

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evidence of directional influence on {symbol}'s fundamentals or investor sentiment.
```

```
Please output only the response in JSON format without any additional commentary:  

response_format_prompt = """Please return the result in the following **JSON format**, without adding any extra explanation:  

{  

  "insight": "This news has a [positive/negative/neutral] impact on {symbol} in the short term, and a [positive/negative/neutral] impact in the medium to long term.",  

  "reason": "Explain the key reasoning behind your assessment. Do not summarize the news content."  

}  

"""
```

## A.2 Dual Trading Decision Module

This section provides the detailed prompt structures used in the Dual Trading Decision Module. While the architectural overview (see Fig. 2) already explains the interaction flow, here we focus on the internal prompt logic and reasoning objectives of each decision agent.

### A.2.1 Direction Decision Agent

The following prompt guides the agent to leverage the key insights extracted by the preceding analytical modules and determine the optimal trading direction (buy, sell, or hold), along with the overall strategic orientation for the current trade.

**System Prompt:**

```
# memory IDs
short_memory_id_desc = "ID of short-term information."
mid_memory_id_desc = "ID of mid-term information."
long_memory_id_desc = "ID of long-term information."
reflection_memory_id_desc = "ID of reflective-period information."
train_memory_id_extract_prompt = "Select and store the most investment-relevant information from major sources (e.g., ARK, Two Sigma, Bridgewater Associates) into the {memory_layer} memory."
test_memory_id_extract_prompt = "Retrieve the most relevant information from the {memory_layer} memory for the current investment decision."

# trading summary
train_trade_reason_summary = "Based on a professional trader's advice, explain why the trader would make such a decision given the provided information."
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test_trade_reason_summary = "Based on
the text information and summarized
price trends, explain the reason for
your investment decision."
test_invest_action_choice = "Based on
the information, choose one of the
following actions: buy, sell, or hold."

# investment info
train_investment_info_prefix = (
    "The current date is {cur_date}. The
    observed market facts are as
    follows:"
    "For {symbol}, the price difference
    between the next and current trading
    day is {cur_record_t1}; "
    "the 7-day difference is {
    cur_record_t7}; "
    "the 30-day difference is {
    cur_record_t30}. "
    "Your decision return is {reward}.\n
    \n"
)
test_investment_info_prefix = "The stock
under analysis is {symbol}, and the
current date is {cur_date}."

# sentiment & momentum explanation
test_sentiment_explanation = """For
example, positive news about a company
may boost investor confidence and
trigger buying activities, pushing the
stock price upward;
whereas negative news tends to dampen
sentiment, leading to selling pressure
and price declines.
Additionally, news related to
competitors or the broader industry can
indirectly affect the target stock's
performance.
Sentiment scores (positive, neutral,
negative) represent the distribution
across these categories (summing to 1)
and, together with "importance" and "
timeliness" indicators, help assess the
market impact and validity of the
information.
"""

test_momentum_explanation = """The
following summarizes recent price
movements, i.e., momentum.
Momentum reflects the idea that stocks
performing strongly in the short term
often continue rising,
while weak performers are more likely to
keep declining.
"""

# training phase prompt
train_prompt = """Please complete the
following two tasks based on the
investment information below:
Important: Do NOT use any future price
differences (T+1, T+7, T+30) in your
reasoning. These are unavailable in real
-time trading. Any output referencing
them will be considered invalid.

1. Directional Decision:
Choose one of the following actions: "buy",
"sell", or "hold" (only if

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uncertain).

You must consider:

- Information from short-, mid-, long-term, and reflective memories;
- Historical price momentum;
- Sentiment tendencies, importance, and timeliness in news or reports.

Briefly describe your decision logic, the overall trading strategy (e.g., long-term accumulation or short-term profit), and indicate the supporting memory indices.

2. Reflection:

The system will automatically evaluate whether your directional judgment matches the market trend.

- If incorrect, explain the misinterpreted or overemphasized information.
- If correct, summarize the key factors behind the correct judgment.

\${investment\_info}

Your output must strictly follow the JSON format below, with no extra text:

```
{
    "investment_decision": "buy" | "sell"
    | "hold",
    "summary_reason": "Brief explanation
        of your decision logic",
    "short_memory_index": [integer list
    ],
    "middle_memory_index": [integer list
    ],
    "long_memory_index": [integer list],
    "reflection_memory_index": [integer
        list],
    "reflection_analysis": "Reflection
        analysis text"
}
```

"""

# testing phase prompt
test\_prompt = """Determine the optimal
investment direction based on the
following information and briefly
justify your reasoning.
You must consider:

- Information from all memory layers (short-, mid-, long-term, reflective);
- Historical price momentum;
- The importance, sentiment, and timeliness of key information.

Provide one of three decisions: "buy", "sell", or "hold", and indicate the
memory IDs supporting your judgment.

\${investment\_info}
\${gr.complete\_json\_suffix\_v2} }

## A.2.2 Quantity and Risk Decision Agent

The following prompt instructs the agent to determine the specific order quantity for the current trade based on the analytical results and strategic guidance from the Direction Decision Agent, while adjusting for current holdings and potential risk