Enterprise Generative AI - Solution for Workflow Management and Automation

computer technologies

Your Solution Partner

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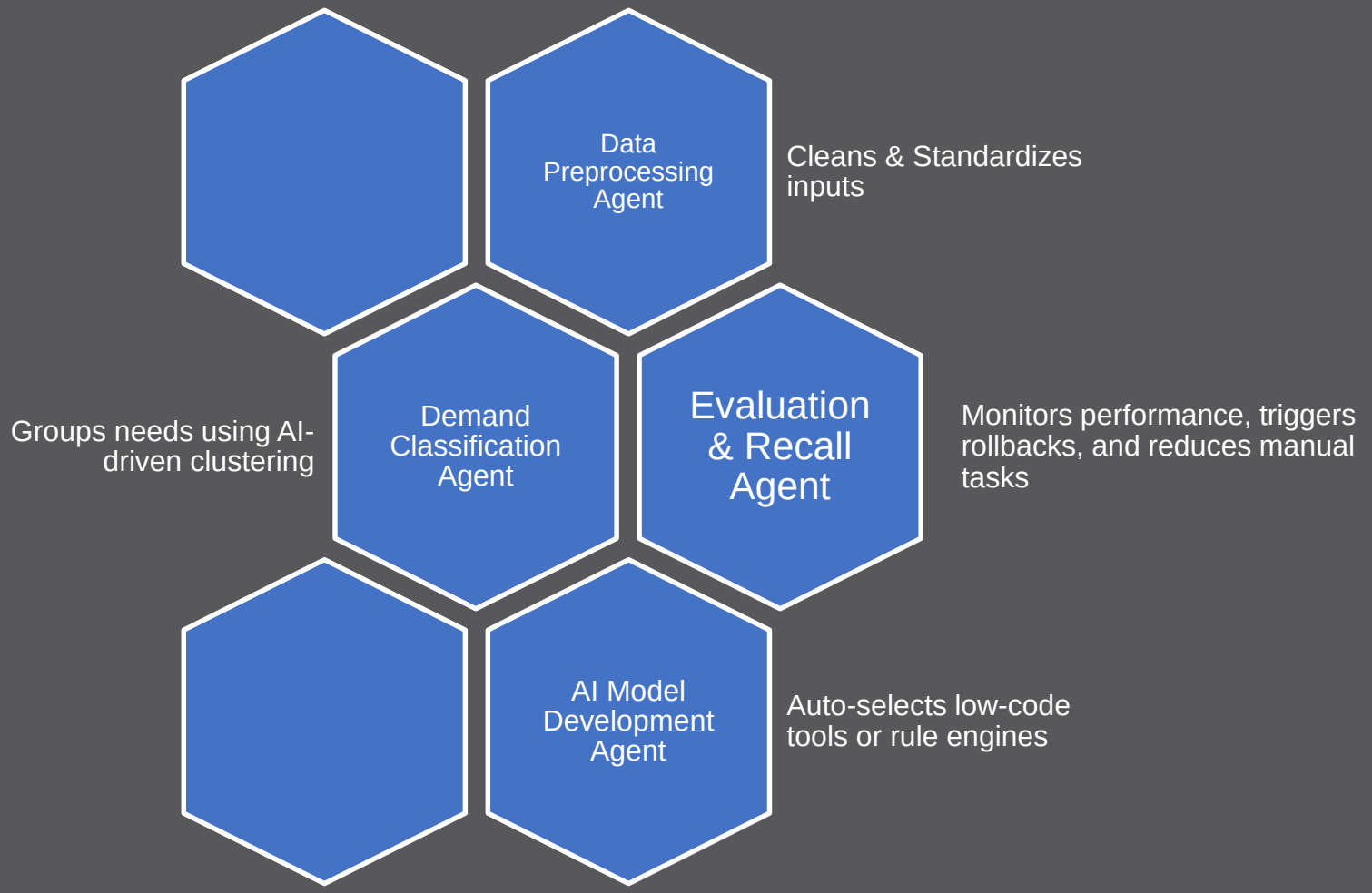
Introduction

This solution leverages a modular agent framework and pre-trained NLP models to automate complex workflows without knowledge graphs. Agents process raw business requirements (e.g., insurance claim automation, customer intent classification) via semantic embeddings, enabling rapid task clustering.



Overall Architecture Design

Based on a Modular Agent Collaboration Framework, integrating the following core components:

Enterprise Knowledge Base & Industry Domain Knowledge

Input: (150) Raw requirements from business units

Improve insurance claim automation rate

Customer inquiry intent classification

Enterprise-Grade Management Platform (FastAGI)

(Permissions/Auditing/Multi-tenancy)

1. Automatically completes problem context using LLMs
2. Generates structured template
3. Knowledge Base Matching: enterprise case libraries

Data Preprocessing Agent

1. Generates requirement embeddings and builds semantic similarity models using enterprise knowledge graphs.
2. Clustering analysis: Identifies related requirements

Demand Classification & Aggregation Agent

1. **Framework Selection**: Recommends technical stacks based on requirement types
2. **Low-code Modeling**: Connects to enterprise data lakes and Support for the integration of multiple models.

AI Model Development Agent

1. **Evaluation**: Monitors real-time metrics.
2. **Recall**: Triggers automatic model rollback & Generates root cause analysis reports

Evaluation & Recall Agent

Core solutions

Problem Enhancement & Annotation

NLP + Knowledge Graph

Low-code Training/Fine-tuning

Dynamic Feedback Optimization

Output the result

Output: Enhanced problem statement document (with priority tags)

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Output: Deployable model packages + technical documentation (with baseline performance)

Output: Dynamic optimization recommendations (model iteration/rule adjustments)

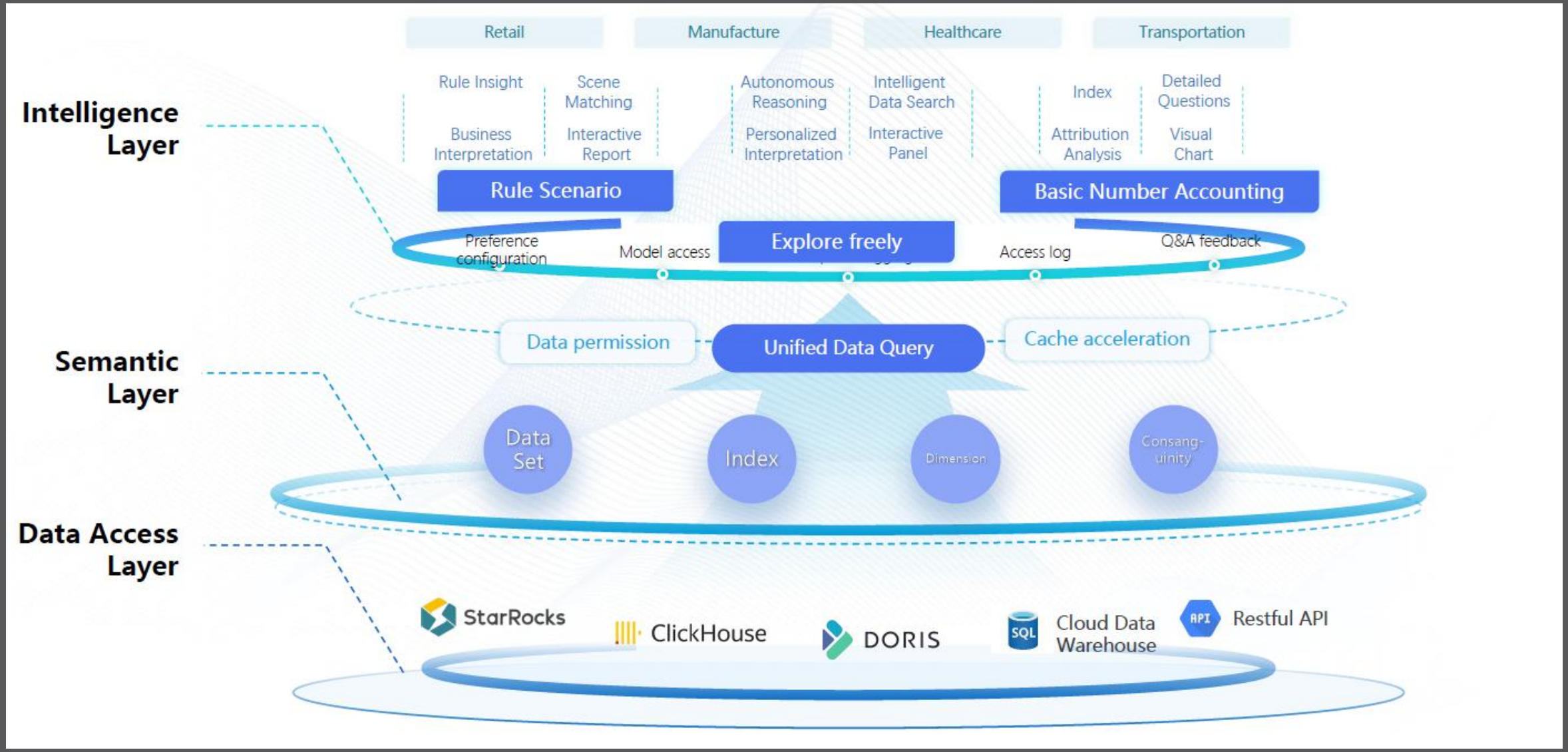
Output:

Structured Reporting

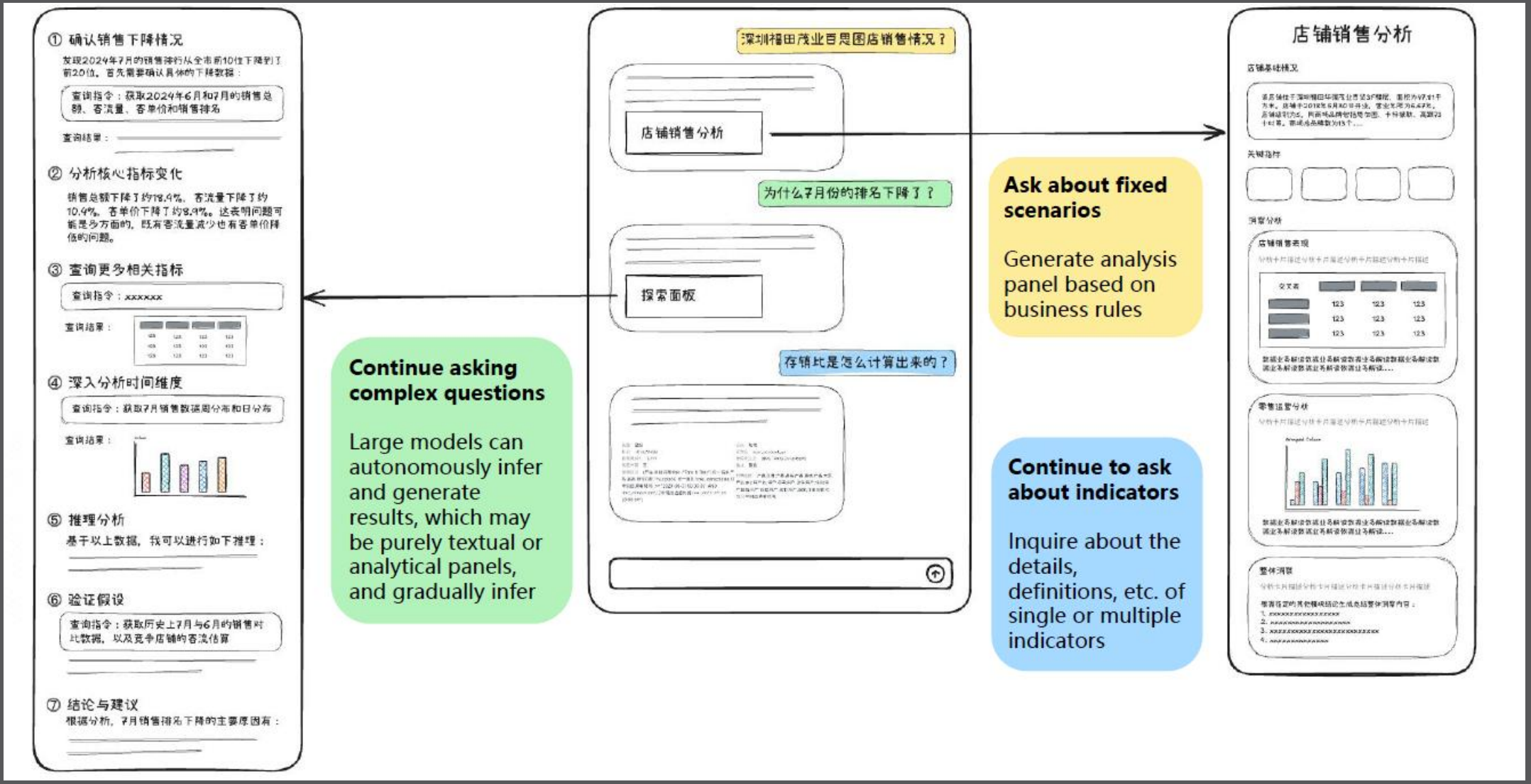
Enterprise-level unified platform management tool

(Process Optimization Scenario)

Operational Agent



Intelligent Analysis | Complex Business Logic Reasoning



Productivity Agent

Super search: support access to **multiple search sources** within the enterprise, support **Internet information** search, and support the creation of **multimodal knowledge base** (grahp, voice, video, etc.)

Multimodal Data Fusion Puzzles for building data Infrastructure

Text

PDF
Word
txt
Excel等

image

Code (industry specific)

AVEVA PDMS Programmable Macro Language manual

7. PML Control logic

There are four types of construct for implementing control logic within a PML Function or Macro. These are:

- The if construct for conditional execution of commands.
- The do command for looping and the associated break and skip.
- The goto label for jumping to a line with a label.
- The handle construct for dealing with errors.

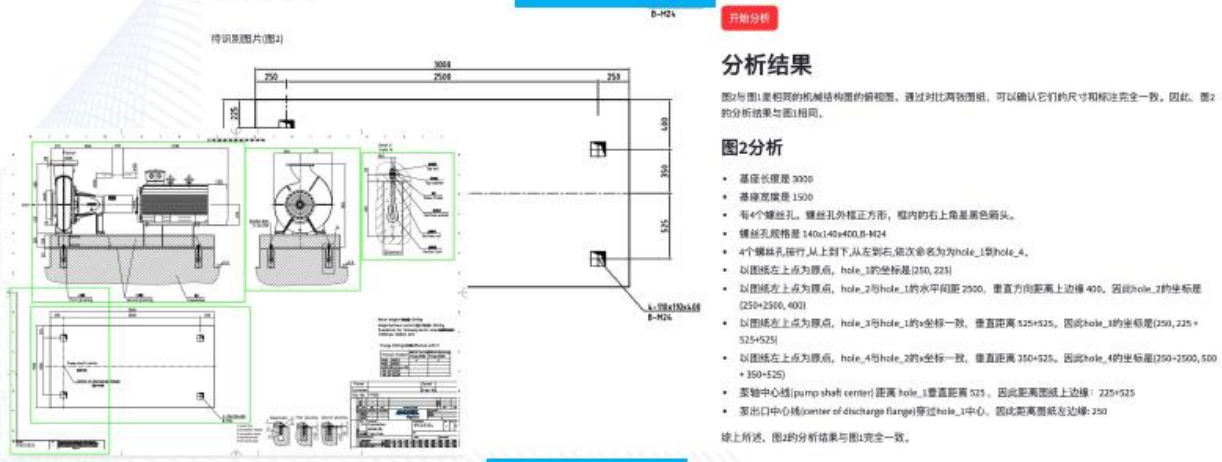
7.1. IF Construct

The full form of an if-construct is as follows:

```
if (Word EQ 'Peanuts' OR (Word EQ 'Crisps') then
  (Snacks = (Snacks + 1
  (Meal = FALSE
elseif ( (Word EQ 'Soup') then
  (Starters = (Starters + 1
  (Meal = TRUE
elseif (Word EQ 'Fruit' Or (Word EQ 'IceCream') ) then
  (Puddings = (Puddings + 1
  (Meal = TRUE
else
  (MainCourse = (MainCourse + 1
  (Meal = TRUE
endif
```

```
NEW RESOLUTION
POS E 0mm N 0mm U 20mm
ORI Y IS S and Z IS E
LEVE 10 11
OBST 0
ANGL 360degrees

NEW LOOP

NEW VERTEX
POS E 0mm N 23mm U 0mm

END
NEW VERTEX
POS E 0mm N 26.5mm U 0mm

END
NEW VERTEX
POS W 2mm N 26.5mm U 0mm

END
END
END
NEW PLOOP
HEIG 20mm
SPUR UBOT

NEW PAVERT
POS E 0mm N 26.5mm U 0mm
BUTL false
SHOP false
```

drawings



待识别图片(图2)

开始分析

分析结果

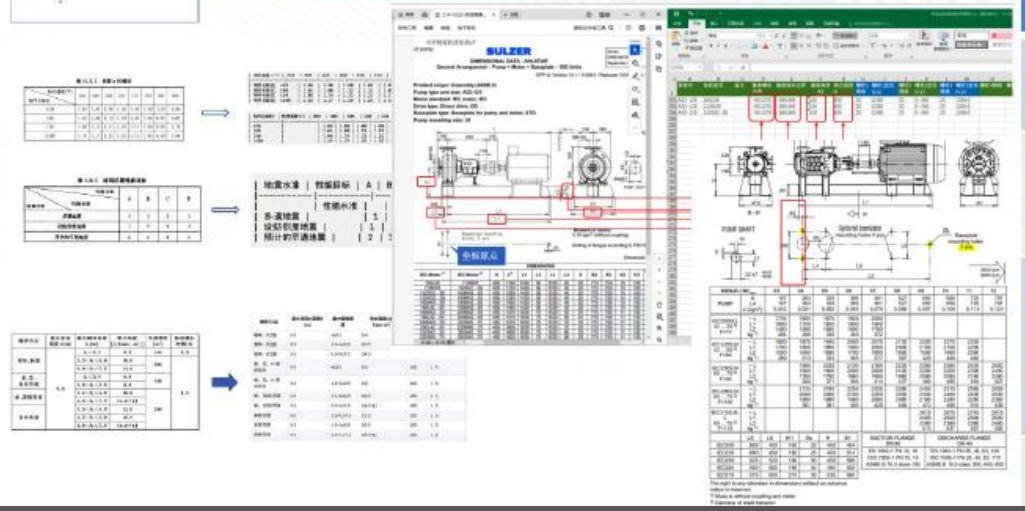
图2与图1是相同的机械结构图的俯视图。通过对比两张图纸，可以确认它们的尺寸和标注完全一致。因此，图2的分析结果与图1相同。

图2分析

- 基座长度是 3000
- 基座宽度是 1500
- 有4个螺丝孔，螺丝孔外框正方形，框内的右上角是黑色箭头。
- 螺丝孔规格是 140x140x400,B-M24
- 4个螺丝孔按行,从上到下,从左到右,依次命名为为hole_1到hole_4。
- 以图纸左上点为原点，hole_1的坐标是(250, 225)
- 以图纸左上点为原点，hole_2与hole_1的水平间距 2500，垂直方向距离上边缘 400，因此hole_2的坐标是(250+2500, 400)
- 以图纸左上点为原点，hole_3与hole_1的x坐标一致，垂直距离 525+525，因此hole_3的坐标是(250, 225+525+525)
- 以图纸左上点为原点，hole_4与hole_2的x坐标一致，垂直距离 350+525，因此hole_4的坐标是(250+2500, 500+350+525)
- 泵轴中心线(pump shaft center)距离 hole_1垂直距离 525，因此距离图纸上边缘：225+525
- 泵出口中心线(center of discharge flange)穿过hole_1中心，因此距离图纸左边缘: 250

综上所述，图2的分析结果与图1完全一致。

Chart (mixed)



formula

Requirement name	Description	Query example
Interpreting formulas	Interpret the parameters and coefficients in the formula and describe the formula.	What are the parameters of the XXX formula? What do they each mean
Typical computation	Solutions provide calculation examples and procedures.	How to check the bearing capacity of rectangular foundation under the condition of weak lying layer? What parameters are needed? What do parameters mean??
Computation by substitution	Substitute the calculation. There are variables in the question. Substitute the formula for calculation.	The exterior wall of the building mainly contains 200 thick autoautoched aerated concrete block bricks and 100 thick rock cotton. Please refer to the formula on the upload page to analyze step by step and estimate the R value of the whole wall
Generate formula calculation book	Generate calcpad code based on the content of the formula	Generate Calcpad code according to the XXX formula.

Core Workflow Management

Main process node

- **Large model:** Callable LLMS answer questions and handle a wide range of tasks based on the given cue word play LLM features
- **Intent recognition:** The ability classification of LLM is used to reason about the classification result that matches the user input
- **Parameter extraction:** The ability of LLM is used to infer and extract structured parameters from natural language

Knowledge retrieval: Retrieves textual content relevant to user questions from the knowledge base

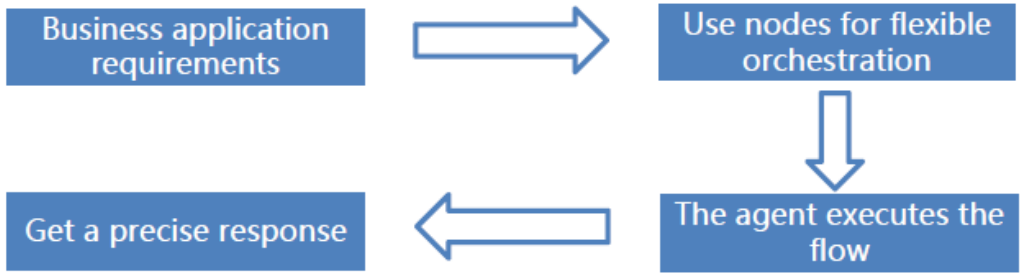
- **Reorder:** Reorder the search results to improve the quality of the search

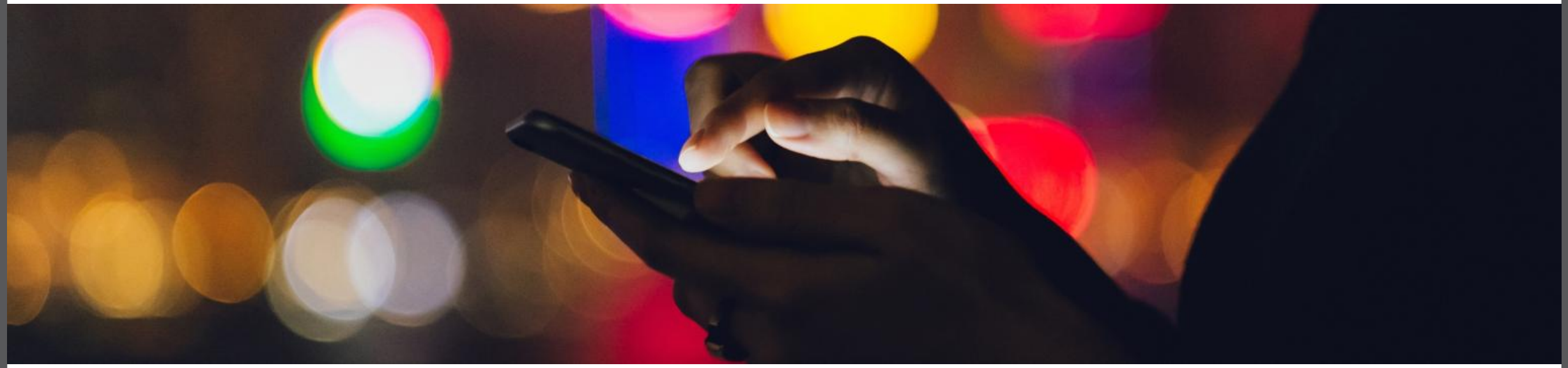
Question reformulation: Integration of technical terms to rewrite user questions into questions that can be easily understood by large models

- **Conditional:** Split the process into multiple branches based on if/else/elif conditions
- **Loop:** Perform multiple steps on a list object

Code execution: Executes a piece of Python or NodeJS code to implement custom logic

- **API calls:** It is possible to communicate with external systems through apis
- **Plugins:** An API toolset that allows you to build plugins for apis you want to reuse
- **Workflows:** Workflows are able to invoke specific tools or apis to perform tasks, have no session support, and can be referenced by agents and other workflows





Customer Case

AI Healthcare

Challenges

The XXX Authority was established in 1990 as a statutory body. As of now, it oversees 43 public hospitals and healthcare facilities, 49 specialist outpatient clinics, and 74 general outpatient clinics, providing over 30,000 hospital beds and employing more than 90,000 staff.
An all-in-one app launched by the XXX Hospital Authority for managing patient health, making appointments for general or specialist outpatient services, and supporting online payments. Due to its high usage, the app requires substantial backend support for answering inquiries and handling issues. The use of AI can greatly alleviate the pressure on staff and enhance patient satisfaction.

AI Chatbot Challenge：

Controllable Autonomy: Capable of answering key questions from the data manual.
Low Hallucination: Ensures answers are based solely on the provided data, avoiding any fabricated responses.
Model Fine-tuning: Equipped with effective methods for continuously iterating and updating knowledge.
Business Reasoning: Breaks down complex queries into manageable sub-tasks, enabling multi-step reasoning.
Acting as the "brain" agent of the HA system, it can perform complex reasoning, respond to user instructions, and assist in directly solving problems.

Solution

- **FastAGI** enables Chatbot business reasoning and semantic understanding of user queries. **CRAG** improves information retrieval and response generation quality.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and quality services
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