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Uliege Guest Lecture - 05/05/25

👥 Who We Are — Sagacify

We're a **service-oriented AI company** that partners with clients to design and deliver custom AI solutions. Our goal is to solve concrete business problems using machine learning and modern software tools.

- We're a **team of ~30** people
- **End-to-end** ML Solutions
- We don't sell products; we design highly customized solutions

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💡 Project organization

ML Team	Dev Team	Ops Team	Sales, PM, ...
- ML Development - Containerization - No security - No interface	- Security - Client interface / connection - Data preparation for ML service - Automation	- Terraform - Optimization of the performance (multiple deployment, …)	- Client relation - Time management - Budget organizer

🚀 Challenges of Putting LLMs in Production

- Latency + compute overhead
- Hallucination risks
- Lack of observability
- Scaling complexity

Our answer: RAG + MLOps discipline + Monitoring tools
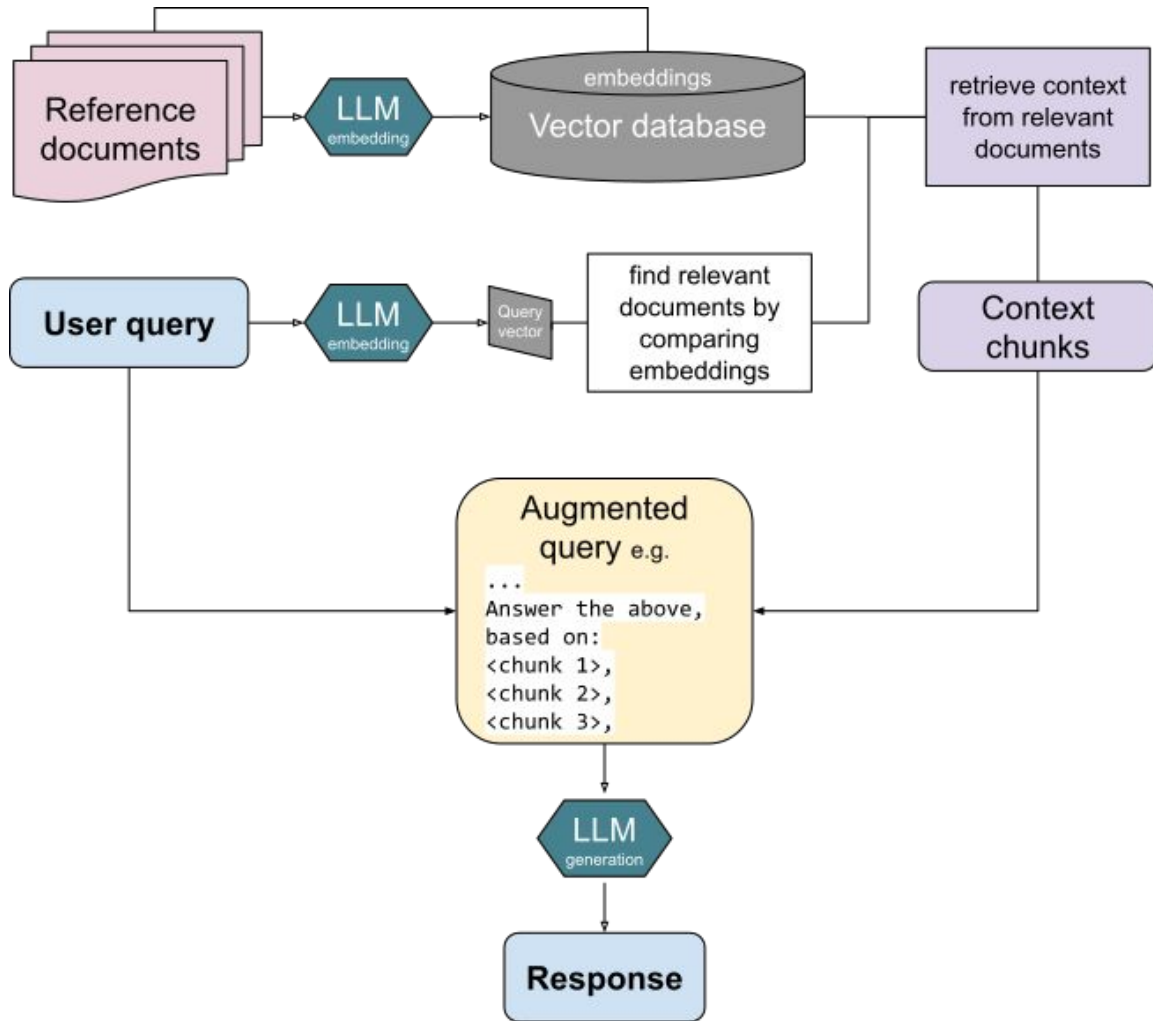
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🧠 External Knowledge via RAG

RAG: Retrieve & ground LLMs with domain-specific context

Benefits:
- Reduced hallucinations
- Custom domain vocab
- Higher accuracy on user tasks

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🧰 LLM Deployment Pipeline

1. Model Choice: Azure OpenAI (cloud) or Ollama (local, open-source)
2. Architectures: One-shot LLMs vs. Agent-based systems
3. DevOps Tools:
   - Docker (for isolation)
   - Poetry (for dependency management)
   - GitHub Actions (for CI/CD)

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📦 Container Strategy

- 2 Virtual environments:
  - `dev`: includes linting, testing
  - `prod`: lightweight, minimal
- Internal artifacts stored via DockerHub
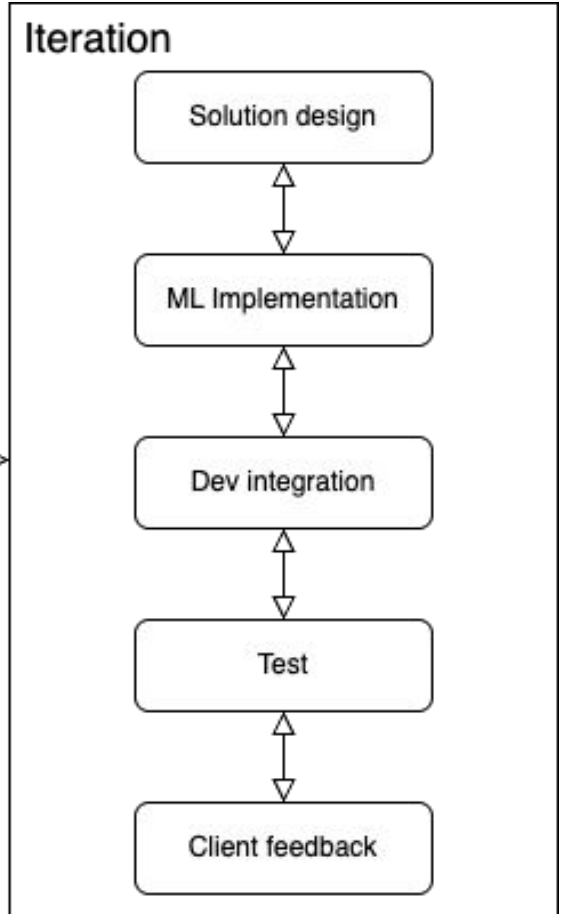- Fully reproducible environments
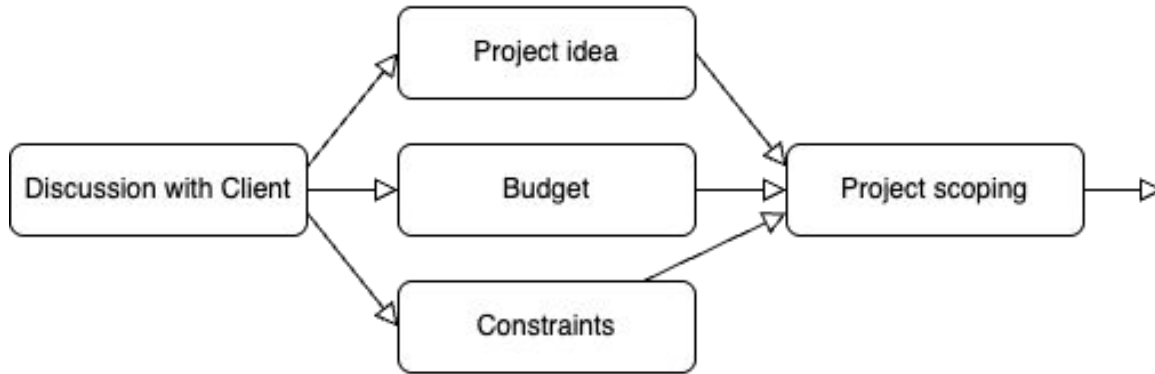
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CI/CD in Practice

- GitHub Actions automates:
  - Commit checks (`pylint`, `black`, `pytest`)
  - Package versioning
  - Container builds & publishing

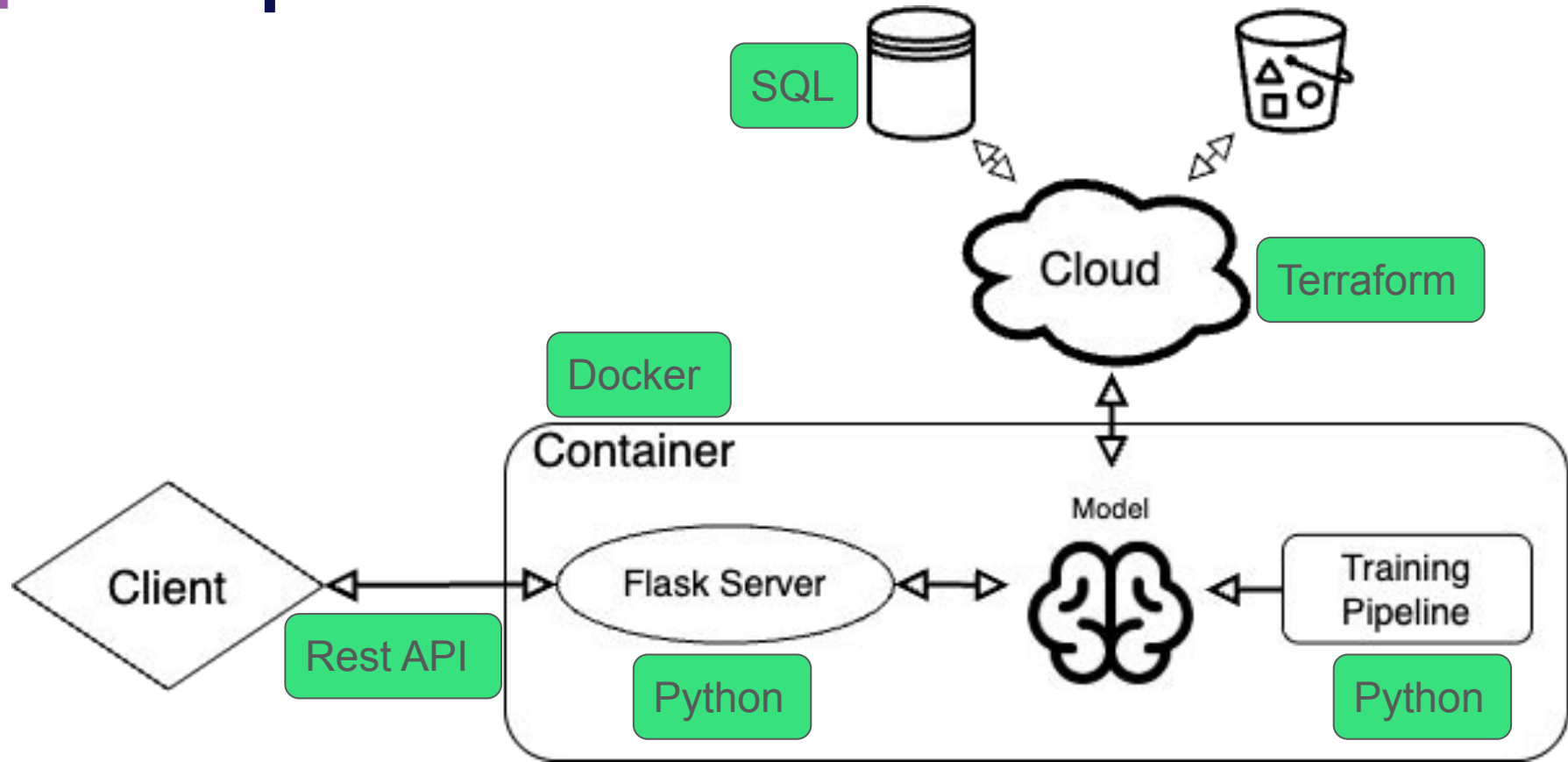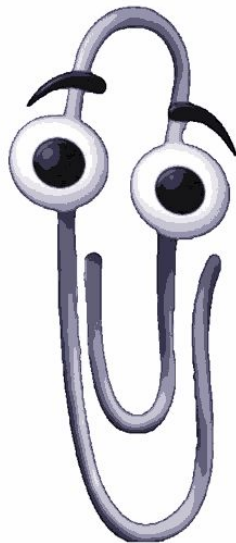Ensures consistency from development to deployment.

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Project Lifecycle
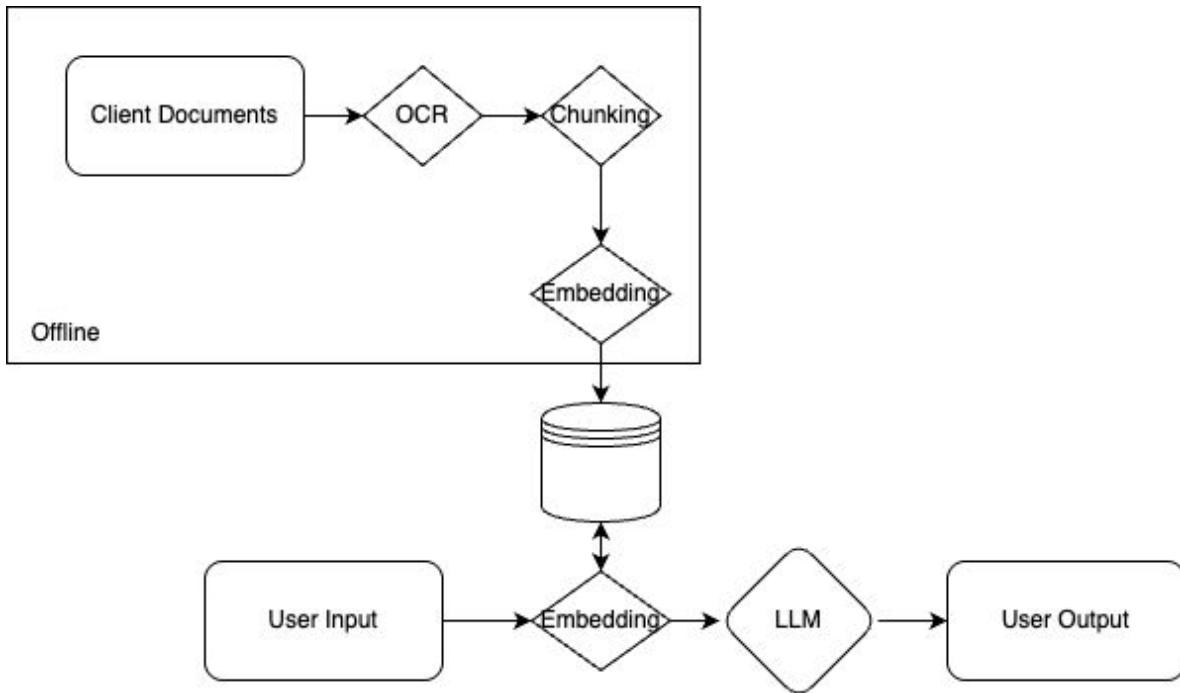
ML Implementation

Project "Clip-it" assistant

Scope : Create an internal assistant with business knowledge

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Project "Clip-it" assistant

Scope : Create an internal assistant with business knowledge
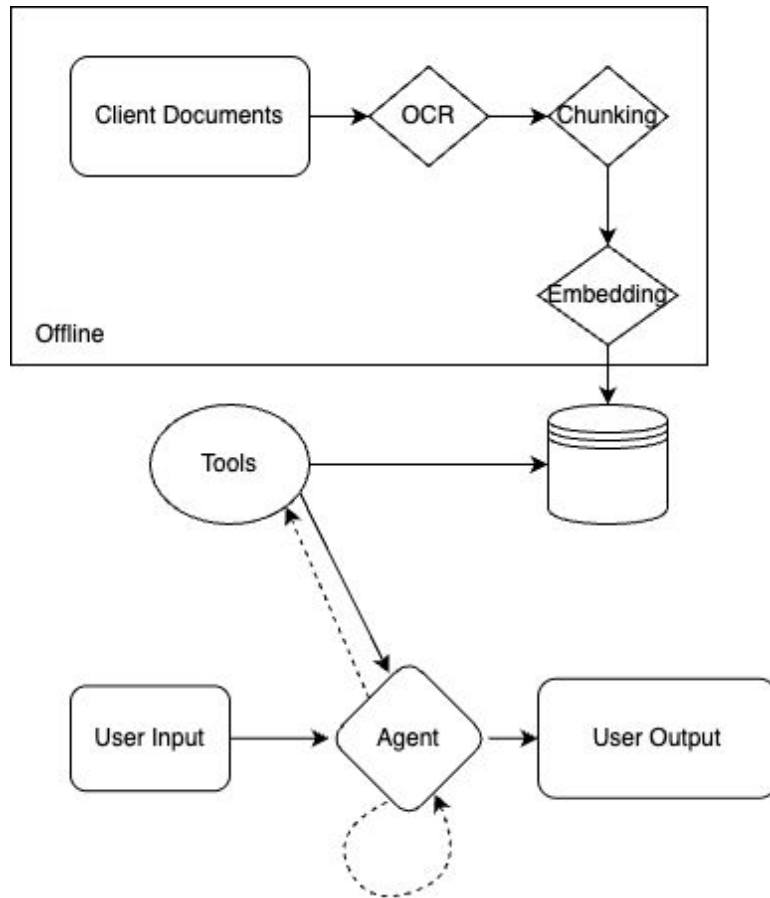

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Project "Clip-it" assistant

Scope : Create an internal assistant with business knowledge

Adding agent architecture, enabling tool usage and reflection

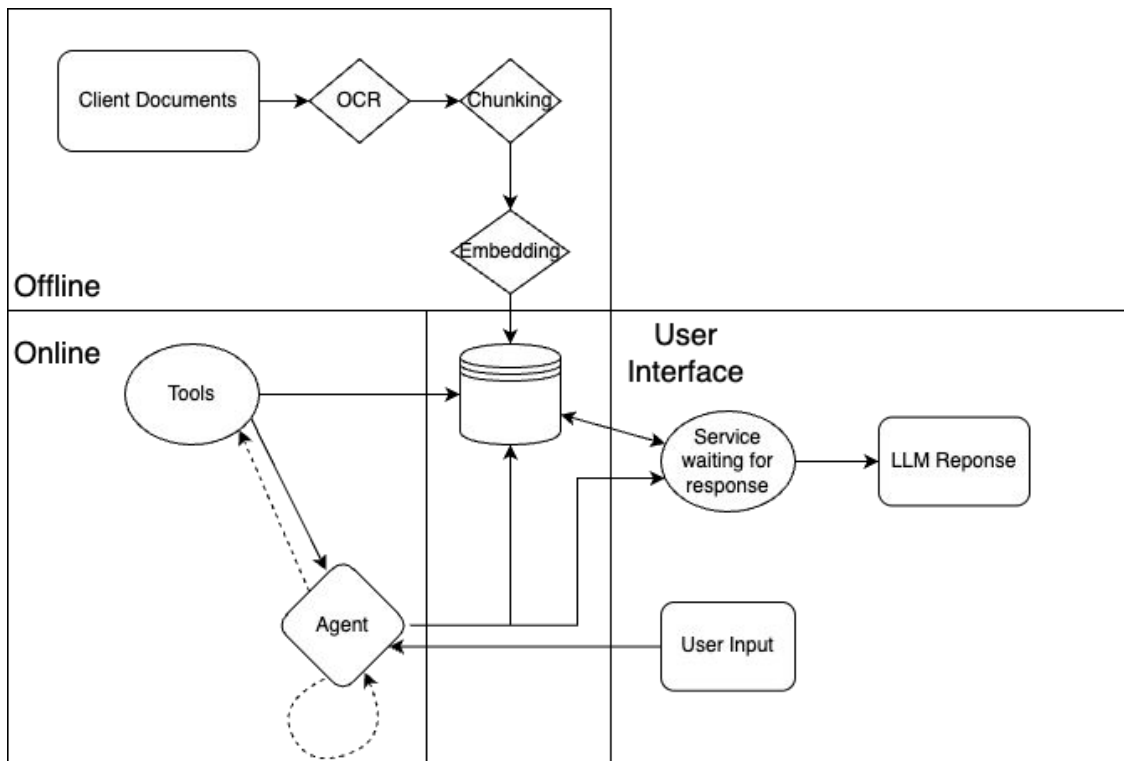**Problem :** The workflow can no longer operate synchronously

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Project "Clip-it" assistant

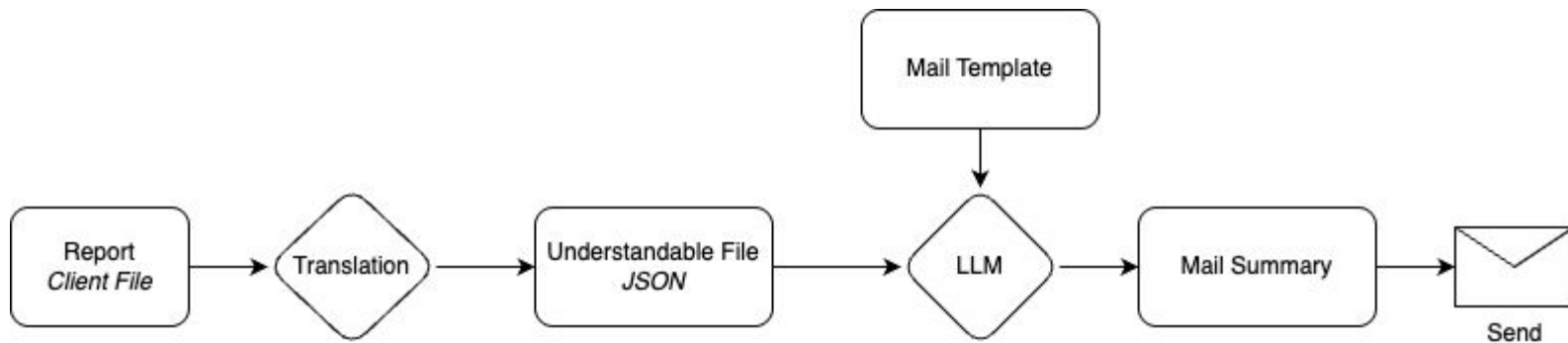**Scope** : Create an internal assistant with business knowledge
Adding agent architecture, enabling tool usage and reflection enabling asynchronous operation

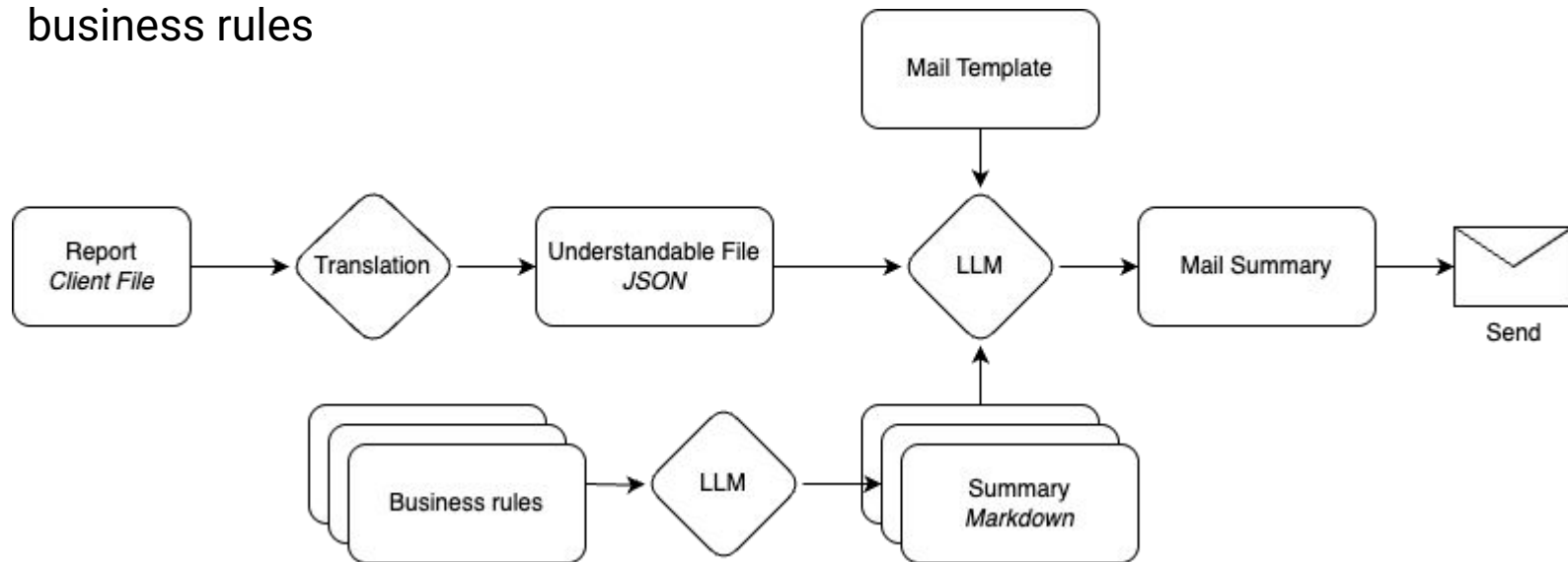Sagacify

Project tank sealing report

Initial scope : convert a sealing report into a summary mail for the client

Project tank sealing report

Updated scope : convert a sealing report into a summary mail for the client using business rules

Project tank sealing report

Further updated scope : convert a sealing report into a summary mail for the client using business rules and and added a mechanism for updating business rules.