

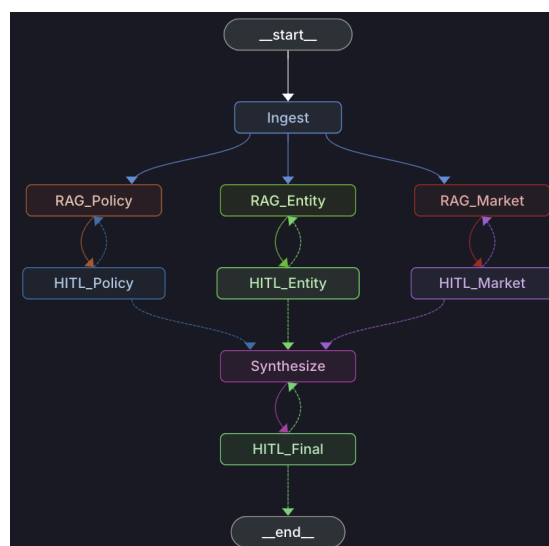
Use case: Commercial loan renewal copilot

Automates loan renewal reviews by ingesting borrower alerts, running parallel RAG retrievals (policy, entity, market), enabling human review and memo synthesis, and tracking approvals with full audit trails.

Structure

The commercial loan renewal copilot is structured as a multi-agent workflow using LangGraph, with h2oGPTe powering retrieval and synthesis for each evidence stream. The process follows these steps:

1. **Ingest:** The workflow is triggered when a borrower is flagged for review (e.g., renewal, limit change). The ingest step sets up the workflow state with borrower and sector details, and formulates queries for policy, entity, and market evidence.
2. **Parallel RAG Retrieval:** Three retrieval nodes run in parallel:
 - **RAG-Policy:** Retrieves relevant credit policy, sector appetite, methodologies, and exemplars
 - **RAG-Entity:** Pulls borrower financials, exposures, compliance history, and relationship data
 - **RAG-Market:** Gathers sector benchmarks, macro trends, peer comparisons, and market news
3. **Human-in-the-Loop (HITL) Review:** Each RAG output is paused for human review. Reviewers can accept, request rework, or trigger a rerun of any stream before proceeding.
4. **Synthesis:** When all RAG streams are accepted, the workflow synthesizes a draft credit memo covering summary, context, financials, risk, recommendations, covenants, pricing, and sensitivities, supported by inline citations.
5. **Final Approval (HITL):** The completed memo is presented for final human approval. If changes are needed, synthesis can be rerun with edits tracked.
6. **Output & Audit:** Once approved, the memo is pushed to the credit management system. The workflow logs all retrievals, decisions, edits, and metrics for governance and auditability.



Why h2ogpte?

h2oGPTe is used because it delivers what generic LLMs can't for regulated credit processes:

- **Enterprise-Grade Security & Data Control**
On-prem, private cloud, and air-gapped deployment options ensure sensitive policy documents and borrower data never leave the bank's environment—crucial for regulatory compliance.
- **Customizable Guardrails & Citations**
Every claim in memos, rating rationales, and covenants can be enforced to require citations from policy or data, supporting model risk management and audit requirements.
- **Seamless Multi-Agent Workflow Integration**
h2oGPTe exposes secure APIs for retrieval, code execution, and workflow automation, making it easy to plug into LangGraph nodes and orchestrate complex, stateful agent workflows with human-in-the-loop review.
- **Provenance, Audit, and Traceability**
The platform logs all retrievals, tool calls, and decision traces, supporting full auditability and model governance—features that generic LLMs leave as custom engineering work.
- **Accuracy & Reliability**
With enforced citations and advanced document AI, h2oGPTe reduces hallucinations, ensures consistent memo structures, and improves extraction from financials.
- **Future-Proof for Predictive Risk**
Designed to work alongside predictive models, h2oGPTe enables memos to cite both policy and model outputs, keeping generative and predictive insights aligned.

Appendix

Files used

Policy Documents (RAG-Policy)

The policy documents provide the credit policy framework, rating methodology, covenant standards, and exemplar credit memos that will guide the loan renewal process:

1. Commercial Credit Policy - Comprehensive guidelines covering risk appetite by sector, approval authorities, underwriting standards, collateral requirements, renewal processes, and pricing matrices.
2. Commercial Credit Rating Methodology - Detailed framework for assigning internal risk ratings using a 10-point scale with specific criteria for financial performance, industry position, management quality, account behavior, and loan structure.
3. Commercial Loan Covenant Library - Extensive covenant definitions, recommended packages by industry, testing protocols, compliance management procedures, and documentation standards.
4. Exemplar Credit Memo - A model credit memo for a manufacturing company demonstrating proper structure, analysis depth, and policy compliance.

Entity Documents (RAG-Entity)

The entity documents provide comprehensive borrower information, financial data, and relationship history:

1. Borrower Profile - Detailed overview of TechManufacture Inc., including company structure, locations, ownership, management, banking relationship, legal/regulatory status, business description, and strategic initiatives.
2. Financial Statements - Five-year financial history with income statements, balance sheets, cash flow statements, financial ratios, covenant compliance history, debt schedules, and projections.
3. Customer and Market Position - Analysis of customer concentration, industry diversification, sales pipeline, competitive landscape, product mix, and SWOT analysis.

4. Facility and Covenant History - Detailed information on current credit facilities, covenant compliance history, borrowing patterns, collateral analysis, guarantor information, and relationship history.

Market Documents (RAG-Market)

The market documents provide industry context, economic conditions, and competitive intelligence:

1. Sector Analysis - Comprehensive overview of the advanced manufacturing sector, including market size, competitive landscape, industry trends, financial benchmarks, risk assessment, technology landscape, and strategic outlook.
2. Economic Outlook - Detailed analysis of macroeconomic indicators, sector performance, credit market conditions, regional economic trends, risk factors, and implications for lending strategy.
3. Competitive Intelligence - In-depth profiles of key competitors in the advanced manufacturing space, comparative analysis, market dynamics by segment, and strategic positioning.