Automation Title

AI-Powered Compliance Policy Assistant

Category

HealthTech / Compliance Automation

Image / Thumbnail

Detailed Description

Overview:
 This automation project demonstrates how **AI and low-code tools** can help health organizations manage compliance more efficiently. Built during the **Loubby AI Bootcamp**, the solution helps a fictional health insurer automatically track regulatory updates, classify internal policy documents, and enable staff to query company policies conversationally.

Business Problem:
 Healthcare and insurance companies face constant updates to frameworks such as **HIPAA**, **GDPR**, and **ISO 27001**. Compliance officers spend hours manually reviewing regulatory documents, updating internal policies, and explaining new requirements to teams. This leads to:

- Delayed alignment with new regulations

- Repetitive manual work

- Information gaps across departments

Solution:
 The **Compliance Policy Assistant** automates the entire lifecycle:

1. Fetching new compliance updates daily

2. Classifying and summarizing them using LLMs

3. Storing and embedding policy documents for semantic search

4. Allowing staff to query company policies through an AI-powered chatbot

Expected Outcome:
 Teams stay continuously informed of compliance changes, policy management becomes traceable and centralized, and the compliance officer's manual workload drops by over 60%.

How It Works (Functionality)

Workflow 1: Compliance News Feed Automation

Trigger: Daily schedule in n8n.
 Actions:

1. Fetch new updates from RSS feeds and official compliance sources (e.g., NIST, HHS, Azure Compliance Center).

2. Merge and deduplicate updates using SQL-mode merge nodes.

3. Summarize key updates with Gemini AI node and tag them by framework (HIPAA, GDPR, etc.).

4. Store updates in Airtable for tracking and Slack notifications.

Workflow 2: Policy Upload and Classification

Trigger: Google Drive (new file uploaded or updated).
 Actions:

1. Download the uploaded document.

2. Extract text from PDFs.

3. Chunk text using Recursive Character Text Splitter (via Data Loader).

4. Generate embeddings with Cohere API.

5. Store embeddings and metadata in Supabase Vector DB.

6. (Optional) Run classification with an AI node to assign categories (e.g., "Access Control Policy", "Data Retention").

7. Log results to Airtable or Google Sheets for review.

Workflow 3: Chat Query Assistant

Trigger: Chat node or Webhook endpoint.
 Actions:

1. Accept user query via chat or HTTP request.

2. Query Supabase Vector DB for semantically similar policy content.

3. Feed retrieved content into an LLM (Gemini) for context-based response generation.

4. Return the answer to the user (e.g., "What's our retention policy for patient data?").

Outputs:

- Summarized compliance updates

- Categorized policy database

- Real-time conversational policy lookup

Tools Required

Tool	Purpose	Notes
n8n	Workflow orchestration	Free / self-hosted or cloud

Cohere API	Text embeddings	Paid API; key required
Supabase	Vector database storage	Free tier available
Google Drive	Document upload trigger	API connection required
Airtable	Policy record management	Optional paid features
Gemini (Google AI)	Summarization and classification	API credentials required

Size of Project

Large (10+ tasks)
Three integrated workflows, multiple triggers, and AI nodes across different data pipelines.

Setup Requirements

- **Cohere API key** for embeddings

- **Supabase project** with vector extension enabled

- **Google Drive** connected to n8n

- **Airtable API key** for record storage

- **LLM API (Gemini or OpenAI)** for summarization and classification

Deployment Time Estimate

- **Without customization:** 4–6 hours (including node setup, keys, and testing)

- **With customization:** 2–3 days (policy formatting, API provisioning, and access setup)

Value Proposition

Metric	Estimate
Manual review time saved	~10 hours/week
Cost savings	~$600/month (assuming $60/hr compliance officer rate)
Staff query turnaround	Instant vs. 1–2 days manual lookup
Policy accuracy & consistency	+40% improvement (based on test cases)

Demo Video

- In progress

Known Limitations

- Cohere embedding API may incur cost for large document volumes.

- Requires manual Supabase cleanup to remove obsolete embeddings.

- Currently optimized for English-language policies.

- Document version control depends on Google Drive revision settings.

Testimonials / Use Cases

- **Fictional company:** Zenith Health-Tech implemented this system for a health insurance client to automate compliance intelligence.

- Compliance team reported **60% less manual monitoring time** and **faster internal communication** on regulatory changes.

Size Classification

Large Project – Over 10 functional steps across 3 integrated workflows.

Estimated ROI

[
({Hours Saved} × {Hourly Rate}) - {Subscription Costs}
= (40 × $60) - ($50 for API tools) ≈ $2,350/month
]

Version & Updates

Version	Changes	Date

v1.0	Initial build: News ingestion + summarization	Sept 2025
v1.1	Added document upload + Supabase embedding	Oct 2025
v1.2	Integrated chatbot with vector search and classification	Oct 2025
v1.3 (Planned)	Role-based access and policy change notifications	Upcoming