DRINKIZZ VIRTUAL ASSISTANT

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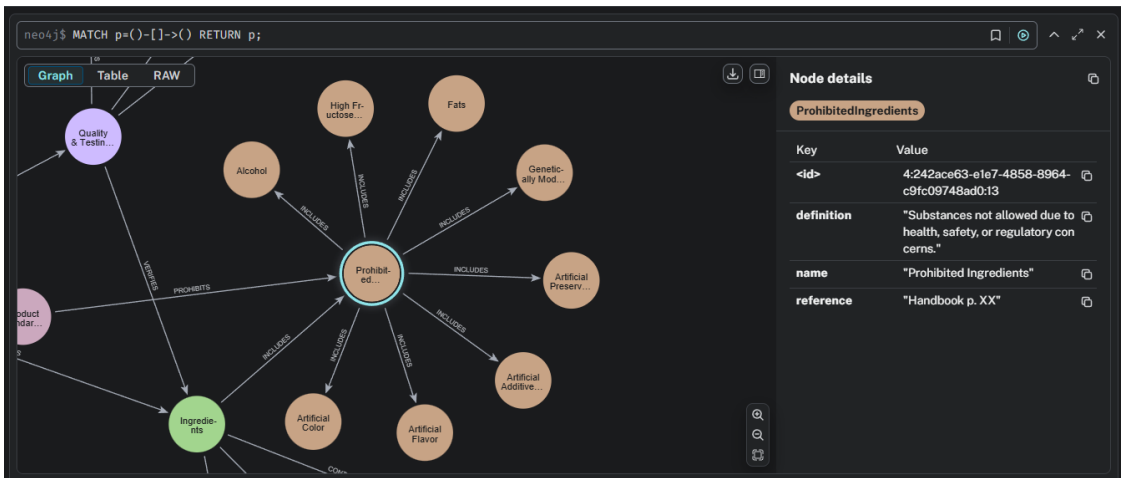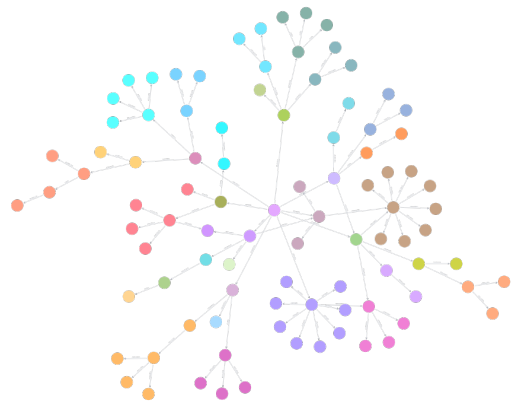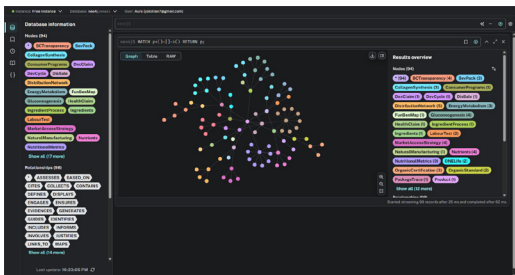- Drinkizz Vietnam

SCAN ME

Background & Motivation

- **Empowering wellness:** Drinkizz champions health and vitality through its O.N.E organic drink, crafted for natural, sustainable energy.
- **Customer challenge:** Many consumers still face gaps in finding clear, timely information about the product and its benefits.
- **Smart solution:** A customer support chatbot, designed to be a 24/7, reliable companion for Drinkizz users.
- **Seamless experience:** Instantly delivers accurate answers, making interactions simple, quick, and hassle-free.
- **Building trust:** Enhances satisfaction while reinforcing Drinkizz's commitment to guiding customers toward healthier, more informed choices.

Project Description

The Drinkizz Chatbot makes trusted nutrition and health information about the O.N.E drink accessible, reliable, and conversational. It builds a semantic knowledge graph from the Drinkizz Handbook—organizing ingredients, nutritional attributes, and functional benefits—and connects it to advanced retrieval that delivers clear, evidence-based answers, and avoid **hallucinations**.

Semantic Knowledge Graph

OWL-modeled glossary integrated into Neo4j with Neosemantics (n10s) for rich, standards-aligned semantics and flexible querying.

- **Hybrid RAG Retrieval:** Combines vector search (FAISS) + graph reasoning (Neo4j) + large language models to retrieve both semantic context and structured, factual relationships.
- **Entity-Aware Understanding:** Automatically detects key entities (products, ingredients, policies) and routes queries to the most relevant sources.
- **Bilingual, Trustworthy Answers:** Responds in Vietnamese or English, matching the user's language with concise, verifiable explanations.

Architecture

Tech Stack

- **Neo4j + Neosemantics (n10s):** Graph database with semantic support. Stores ontology-driven knowledge, enabling precise and explainable queries.
- **OWL Ontology / Glossary:** Defines domain concepts (e.g., ingredients, health effects) and relationships, ensuring consistency and reasoning.
- **FAISS Vector Store:** High-performance vector database for semantic similarity search over documents and embeddings.
- **OpenAI LLMs:** Powers natural language understanding, reasoning, and response generation using retrieved knowledge.
- **spaCy NER:** Extracts domain-specific entities (ingredients, nutrients, effects) from text to enrich the knowledge graph.
- **Hybrid RAG with Fusion:** Combines symbolic retrieval (Neo4j) and vector retrieval (FAISS), then fuses results for accurate and rich answers.
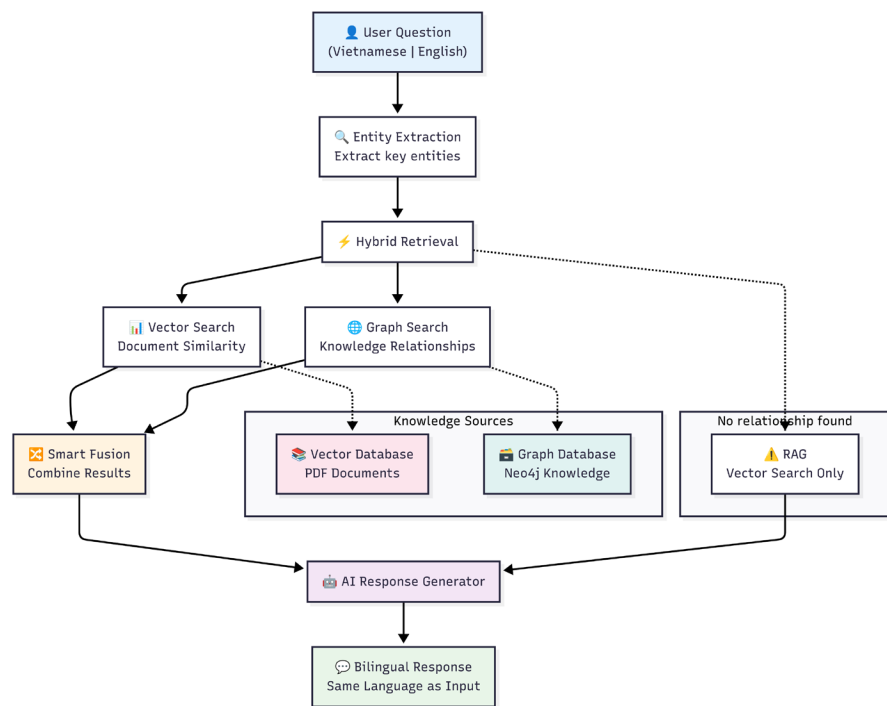
Why It Matters

- Promotes consumer trust with verifiable, source-grounded answers
- Advances scientific reliability in wellness communications
- Translates complex nutrition science into accessible, everyday guidance

How It Works

1) User asks a natural question
2) Entity extraction ⮕ hybrid retrieval (vector + graph)
3) Smart fusion of results ⮕ grounded context
4) LLM generates a clear, fact-based response