

In The Name of Allah

AI Agent: Prof Recommender

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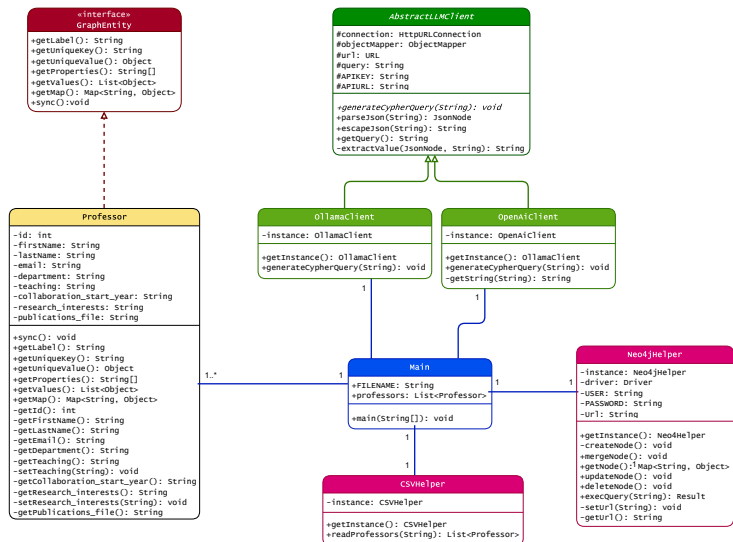
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Presentation Overview

- ① Class Diagram
- ② Neo4j
- ③ OpenAI and Ollama as LLMs
 - OpenAI API
 - Ollama API
 - Extra Query
- ④ Input/Output

UML (Structured) Class Diagram



Neo4j as Knowledge Base

OpenAI API Query Format

gpt-4

- {
 - "model": "gpt-4",
 - "messages": [
 - {"role": "system", "content": " PROMPT_1 "},
 - {"role": "user", "content": " PROMPT_2 "}
 -],
 - "max_tokens": 200
- }

- 1 PROMPT_1 = "You are a Cypher query generator. Only provide Cypher queries in a single line, without any line breaks or extra formatting."
- 2 PROMPT_2 = "i want to take Computer Vision course this term, Which professor you suggest?"

Ollama API Query Format

codellama:7b

- {
 - "model": "codellama",
 - "prompt": " PROMPT_1 ",
 - "stream": "false"
- }

- 1 PROMPT_1 = "USER_REQUEST='%s' Please create a Cypher query based on USER_REQUEST for a graph in Neo4j where nodes represent Professors."

Explain Graph nodes and their properties for LLMs

- 1 Graph nodes represent Professors. Each Professor node has the following properties: `professor_id` (which is unique and should be used to identify the professor), `first_name`, `last_name`, `email`, `department`, `teaching`, `collaboration_start_year`, `research_interests`, and `publications_file`. The `professor_id` should be used as the unique identifier for each node, and the query should create nodes for Professors with the given properties. **IMPORTANT:** When filtering based on the request, the query should not require an exact match for fields like `'teaching'` or `'research_interests'`, but should instead search for partial matches (e.g., using the `CONTAINS` operator) for the keyword. Additionally, the results should be sorted by `collaboration_start_year` in ascending order (i.e., from the smallest number upward)

Definitions & Examples

Definition

A **prime number** is a number that has exactly two divisors.

Example

- 2 is prime (two divisors: 1 and 2).
- 3 is prime (two divisors: 1 and 3).
- 4 is not prime (**three** divisors: 1, 2, and 4).

You can also use the theorem, lemma, proof and corollary environments.

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The End

Questions? Comments?