

KNOWLEDGE GRAPH ASSIGNMENT 3

Agentic workflow with LLM and Knowledge Graph

Create an application on top of the hospital neo4j graph schema you created in previous assignment.

This application will take user questions in natural language and respond in natural language with the information pulled from the neo4j graph database.

You will use agentic workflow to achieve the following:

- 1) LLM should create the cypher query and invoke the tool to execute it
- 2) LLM should generate the final response to the user based on the query output from neo4j.

Tips/steps to implement:

- 1) Define a system prompt that gives the role of a hospital assistant to the LLM and provide it with the schema of your hospital knowledge graph you created in previous assignment
LLM should
 - a. Reason based on the user question
 - b. Generate the cypher query needed to answer the user question
 - c. Use tools and agentic workflow to execute the query
 - d. Create a human like response
- 2) Define the tool (function) to connect to the neo4j instance and execute the query. The tool should be as generic as possible
- 3) Give the query output to the LLM to get a human like response generated
- 4) Return the response to the user

Submission

- 1) Python code for the application
- 2) Screenshot of the question and the response you get (VS Code console output screenshot is sufficient or streamlit/gradio screenshot (Streamlit/gradio UI is optional, not mandatory))