

Assignment Gamma

Total marks 100

Deadline 28 Dec 2025

You can do it in a group of two people.

Question no 1

Refer to the base Tutorial_5a

1. Interact with the LLM model and modify according to your use-case, such as medical, climate change or transport in the Karachi queries. Carefully note-down the responses from the LLM and write your analysis.
2. Compare the response from the different LLMs and plot the results.
3. Modify the notebook and add some-other LLMs that can be run in the colab environment and provide performance analysis on the use-case developed in the part 1.
4. Modify the prompt to be inputted into the LLMs and check the performance and write analysis.

Question no 2

Refer to the base Tutorial_5b and Tutorial_7_V1

1. Invoke different tools and write analysis of the tool calling by the model.
2. Design a case-study that implement LLM model with the tool callings for the a person who checks stock market, property market, gold price, and car market to buy or sell his assets. You can declare LLMs-powered agents to achieve the task.
3. Modify the use-case and make the entire use-case protected from online security threats. Use any technique that is viable for the solution.

Question no 3

Refer to the base Tutorial_8 and Tutorial_9

1. Design a case-study that implement agentic AI framework for the a person who checks stock market, property market, gold price, and car market to buy or sell his assets. You can declare LLMs-powered agents to achieve the task. Integrate RAG in this use-case Langhcain framework.

2. Design a case-study that implement agentic AI framework for the government, agencies, stakeholders to launch post-flood rehabilitation activities in certain area. You can declare LLMs-powered agents to achieve the task. Integrate RAG in this use-case and Langhcain framework.

3. Design a case-study that implement agentic AI framework for the government, agencies, stakeholders to launch post-flood rehabilitation activities in certain area. You can declare LLMs-powered agents to achieve the task. Integrate RAG in this use-case and Langhcain framework.

4. Design a case-study that implement agentic AI framework for the hospitals, doctors, and people for the dengue and malaria disease related issues. You can declare LLMs-powered agents to achieve the task. Integrate RAG in this use-case and Langhcain framework.

5. Design a case-study that implement agentic AI framework for the food recipe and food quality checking. You can declare LLMs-powered agents to achieve the task. Integrate RAG in this use-case and Langhcain framework.

Question no 4

Complete the following tables related to the **agentic AI** that have been published/exist.

Best papers

| Paper title | Year | Link of the paper | Journal / Conference | Agentic AI contributions |
|-------------|------|-------------------|----------------------|--------------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Companies / Start ups

| Company name / start up | Year | Website link | Company profile | Agentic AI solutions |
|-------------------------|------|--------------|-----------------|----------------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Good luck