Hyperledger Labs AI-FAQ: GUI implementation and prototype deployment

<table>
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<tr>
<th>Project Title</th>
<th>Hyperledger Labs AI-FAQ LLM ChatBot GUI implementation and prototype deployment</th>
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<tbody>
<tr>
<td>Status</td>
<td>ACCEPTING APPLICATIONS</td>
</tr>
<tr>
<td>Primary Focus</td>
<td>CODING DOCUMENTATION</td>
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**Description**

The Hyperledger Labs AI-FAQ is an LLM ChatBot testable as a proof-of-concept. It replies to questions about Hyperledger standard documentation. The current version is a Google Colab Notebook which uses Gradio as GUI. This project proposes an implementation of a standard ChatBot GUI and the deployment of a prototype. Our end goal is to have a more usable system installed on a Cloud Server.

**Learning Objectives**

- Learn LLM background technology
- Learn Javascript language and framework
- Learn basics of Front-end development
- Learn Cloud architecture and deployment
- Learn how to create high quality documentation

**Expected Outcome and Deliverables**

- An LLM prototype with acceptable time response and implementation costs
- A Front-end component prototype
- A simple container architecture
- A good quality documentation

**Relation to Hyperledger and Impact on the community**

Hyperledger Labs aifaq: [https://github.com/hyperledger-labs/aifaq](https://github.com/hyperledger-labs/aifaq)

**Recommended Skills**

- Fundamentals of Front-end programming
- Typescript/JavaScript programming language
- Exposure to containerization

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**Additional Information**

Wiki pages are available here:
[https://labs.hyperledger.org/labs/aifaq.html](https://labs.hyperledger.org/labs/aifaq.html)
[https://wiki.hyperledger.org/display/labs/AI+FAQ](https://wiki.hyperledger.org/display/labs/AI+FAQ)

Timeline:
Mentee Training Session
Week 1: Project Introduction and LLM Background

- **Objective:** Understand the project scope and learn about LLM (Large Language Models) technology.
- **Deliverables:**
  - Complete a review of the existing Hyperledger Labs AIFAQ documentation.
  - Research and document the basics of LLM, focusing on how they can be applied to create intelligent ChatBots.

Week 2: Introduction to JavaScript and Frameworks

- **Objective:** Learn JavaScript and explore frameworks that will be used for the project.
- **Deliverables:**
  - Complete JavaScript tutorials focusing on syntax and basic programming constructs.
  - Explore and document JavaScript frameworks suitable for ChatBot development (e.g., Node.js for backend, React or Vue.js for frontend).

Week 3: Front-end Development Basics

- **Objective:** Learn the fundamentals of front-end development.
- **Deliverables:**
  - Create a basic static webpage using HTML and CSS.
  - Integrate simple JavaScript code into the webpage to prepare for more dynamic development.

Week 4: Front-end for ChatBot

- **Objective:** Develop the front-end component of the ChatBot.
- **Deliverables:**
  - Design a user-friendly interface for the ChatBot using your chosen JavaScript framework.
  - Implement the interface as a functional prototype that can later be integrated with the backend LLM.

Week 5: Cloud Architecture Introduction

- **Objective:** Understand cloud architecture and select a cloud service for deployment.
- **Deliverables:**
  - Research cloud service providers (e.g., AWS, Google Cloud, Azure) and their offerings.
  - Document the pros and cons of each service with respect to the project’s needs and select one for deployment.

Week 6: Cloud Deployment Basics

- **Objective:** Learn how to deploy applications on the cloud.
- **Deliverables:**
  - Go through tutorials on deploying applications on your chosen cloud service.
  - Begin the deployment of the front-end component as a test.

Week 7: Containerization

- **Objective:** Learn about containerization and how it can be used for the project.
- **Deliverables:**
  - Research and document the basics of container technology (e.g., Docker).
  - Create a simple container for the ChatBot’s front-end.

Week 8: Integration and Testing

- **Objective:** Integrate the front-end with the LLM backend and test the prototype.
- **Deliverables:**
  - Integrate the front-end component with the LLM backend, ensuring they communicate effectively.
  - Conduct initial testing and document any issues or bugs.

Week 9: Deployment on Cloud Server

- **Objective:** Deploy the fully integrated ChatBot on the cloud server.
- **Deliverables:**
  - Finalize the deployment of the ChatBot on your chosen cloud service.
  - Perform comprehensive testing to ensure functionality and performance standards are met.

Week 10: Documentation and Quality Assurance

- **Objective:** Create high-quality documentation and perform final quality checks.
- **Deliverables:**
  - Document the project extensively, including setup instructions, user guides, and technical details.
  - Perform final rounds of testing, focusing on user experience and bug fixing.
Week 11: Project Review and Feedback

- **Objective**: Review the project outcomes and gather feedback.
- **Deliverables**:
  - Organize a project demonstration for stakeholders to gather feedback.
  - Reflect on the project process, documenting lessons learned and potential improvements.

Week 12: Project Wrap-Up and Future Planning

- **Objective**: Conclude the project and plan for future enhancements.
- **Deliverables**:
  - Finalize all project documentation and ensure all code and resources are well-organized and accessible.
  - Outline potential future enhancements and areas for further development.

This timeline is a guide and may need adjustments based on your progress, challenges encountered, and any evolving project requirements. Regular meetings with mentors and team members will be crucial to staying on track and addressing any issues promptly.