**Project Proposal: Sahay AI**

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**Track:** Agentic AI applications for real-world issues
**Skills:** Python, Machine Learning, Natural Language Processing, Agentic AI Design, Web Development, Data Engineering.

**1. Problem Statement**

A critical "information gap" and procedural complexity prevent millions of deserving citizens in India from accessing government welfare schemes. Key barriers include:

- **Lack of Awareness:** Citizens are often unaware of the schemes for which they are eligible.
- **Complex Information:** Official documentation is often dense and difficult to understand.
- **Cumbersome Processes:** Application procedures can be daunting and confusing, especially for those with limited digital literacy.

This leads to the chronic underutilization of benefits designed to improve livelihoods and promote social equity.

**2. Proposed Solution: Sahay AI**

"Sahay AI" is a personalized, conversational AI agent designed to be a trusted assistant for every citizen. It transforms the daunting task of navigating government schemes into a simple, empowering conversation.

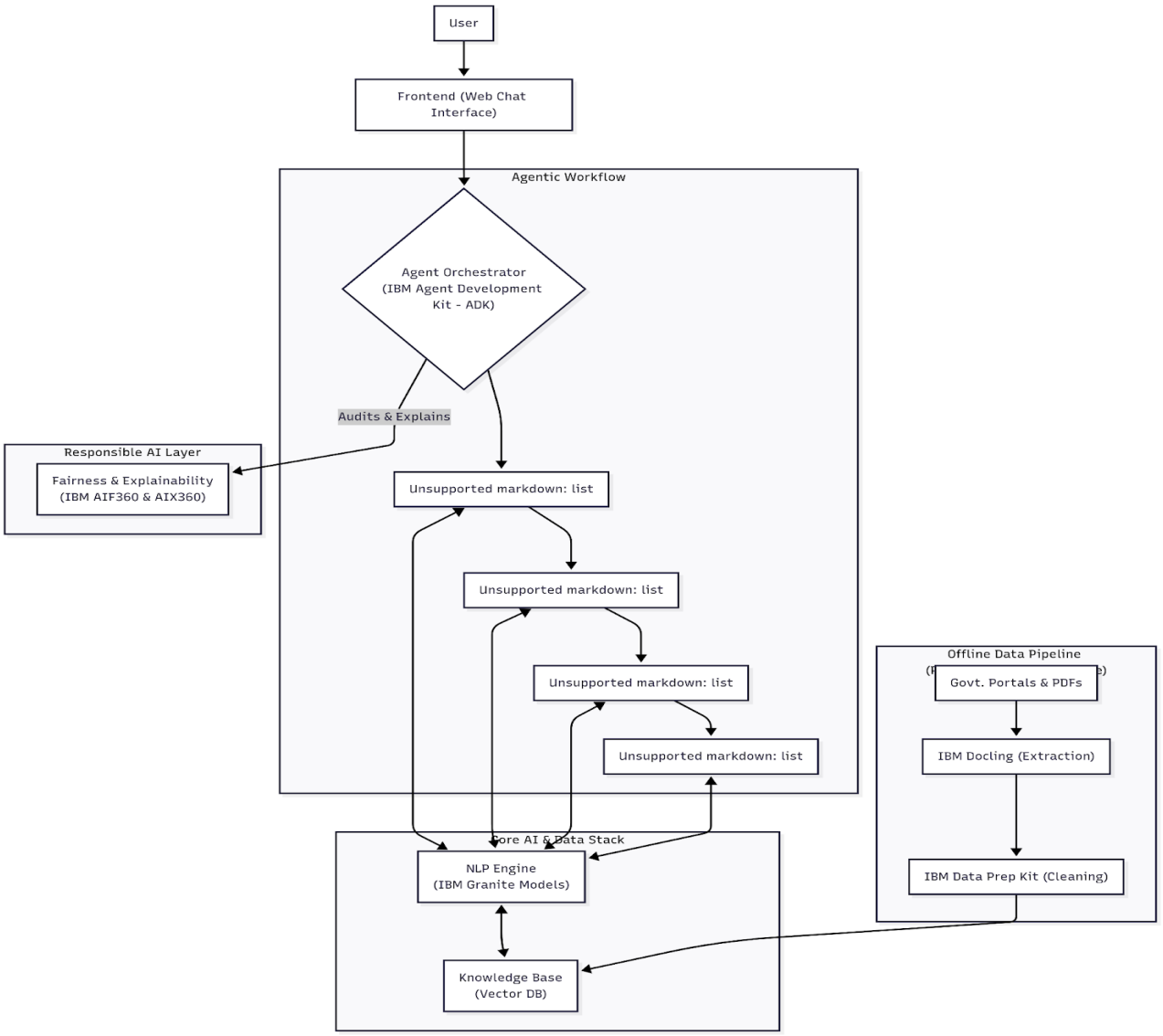
Through a lightweight, multilingual chat interface, Sahay AI will:

- Dynamically understand a user's unique profile and needs.
- Identify all relevant central and state government schemes.
- Explain complex benefits and eligibility criteria in simple, clear language.
- Provide step-by-step guidance through the entire application process.

**3. High-Level Architecture & IBM Open-Source Stack**

The system is built on a modular architecture that leverages a powerful suite of IBM's open-source tools:

- **Agent Orchestrator:** The core of the system, built using the **IBM Agent Development Kit (ADK)**, which manages the conversational context and orchestrates the entire user journey.
- **NLP Engine:** Powered by **IBM's Granite Models** for nuanced Natural Language Understanding (NLU), multilingual responses (NLG), and abstractive summarization.
- **Automated Knowledge Base:** A vector database populated via an offline pipeline that uses:
    - **IBM Docling:** To parse and extract structured information from unstructured government portals and PDF circulars.
    - **IBM Data Prep Kit (DPK):** To clean and prepare the extracted text for reliable use.
- **Responsible AI Layer:**
    - **IBM AI Fairness 360 (AIF360):** Integrated to periodically audit the recommendation algorithm for demographic biases.
    - **IBM AI Explainability 360 (AIX360):** Used to provide users with transparent explanations for why a particular scheme was recommended.




**4. Innovation and Impact**

- **Innovation:** Sahay AI's novelty is its agentic, user-centric design that simplifies bureaucracy. By integrating a suite of robust IBM AI technologies, we create a solution that is powerful, transparent, fair, and accessible.
- **Impact:** The project will directly increase the uptake of welfare schemes, empowering citizens, promoting financial inclusion, and reducing reliance on intermediaries. It will make public services more accessible, contributing to better and more equitable governance.

**5. Project Roadmap & Feasibility**

Our development plan is structured for rapid, high-impact delivery.

- **Phase 1 (Hackathon MVP):** Build the core agentic workflow using the IBM ADK. We will focus on a single, high-impact scheme to create a functional demo for scheme discovery and information simplification.
- **Phase 2 (Post-Hackathon):** Expand the Knowledge Base to the top 15 national schemes and enhance multi-language support with the Granite model.
- **Phase 3 (Long-Term):** Integrate state-specific schemes, conduct user testing with a pilot group, and deploy.