LawVriksh GenAI Engineer Assignments

Deadline: Submit within 2 days after receiving the assignment

Note: A basic frontend for the blog platform will be provided; focus solely on backend/API and reporting.

Assignment 1: Develop Agentic Blog Support System

Scenario:

You have access to a supplied React-based blog frontend. Build and expose backend APIs that enable an agentic workflow for blog post analysis and keyword recommendation.

Core Requirements:

1. **API Development**
    - Initialize a fresh backend project (Node.js/Express or Python/FastAPI), no boilerplate provided.
    - Endpoints to create:
        - `POST /api/analyze-blogs`
            - Input: array of existing blog texts.
            - Output: for each post, sentiment metrics, extracted key topics, and initial keyword suggestions.
        - `POST /api/recommend-keywords`
            - Input: current draft blog text (partial or full), cursor context (optional), and user profile JSON.
            - Output: a dynamic ranked list of suggested words or phrases to insert next, as well as a real-time readability/relevance score and estimated token usage.
    - Secure both endpoints via API key or Bearer JWT.

2. **Agentic Workflow During Blog Writing**
    - Implement an agent (server-side orchestrator) that operates in real-time during the blog writing process:
        1. Periodically analyzes the evolving draft using `/api/recommend-keywords`.
        2. Refines suggestions by referencing patterns learned from `/api/analyze-blogs` run on past blog data.
    - The agent should suggest new keywords inline or highlight weak sections (based on scoring) as the user types.
    - Handle intermittent failures with retries (up to 3 with exponential backoff).
3. **AI Model Integration**
    - Integrate an LLM (e.g., OpenAI GPT-4, Llama) of your choice—justify selection in your report.
    - Craft prompt templates optimizing token efficiency (include before/after token counts).
    - Return token usage per API response.
4. **Blog Scoring System**
    - Define and implement a scoring algorithm combining:
        - Keyword relevance (semantic similarity and frequency).
        - Readability metric (e.g., Flesch-Kincaid).
        - User profile factors (preferred topics, reading level).
    - Score range should be 0–100.

Deliverables:

- GitHub repo `genai-intern-agent` with source under `src/`.
- Postman collection demonstrating both endpoints with sample inputs/outputs.
- `REPORT.md` covering architecture, model/prompt rationale, scoring formula, and token efficiency.
- Plagiarism on report is 30% accepted , otherwise your submission will be discarded

Note: Assigment 2 is optional , if you completed assignment 2 then this will be considered as a bonus and your chances of selection will be higher

Assignment 2: Propose Agentic Control Feature (optional: do it for bonus but focus on first assignment first then think about this one)

Scenario:

After reviewing the LawVriksh site (both provided frontend and your backend work), propose a new agentic control feature that could automate a key process, improving user experience or content quality.

Core Requirements:

1. **Feature Identification**
    - Select one area (e.g., comment moderation, content tagging, personalized notifications).
    - Describe the current manual or semi-automated process.
2. **Agent Design Proposal**
    - Outline how an agent would operate: inputs, decision logic, outputs, and integrations.
    - Specify which APIs, models, or data sources it would leverage.
3. **Impact Analysis**
    - Explain expected benefits (e.g., time savings, higher content relevance).
    - Identify potential risks or failure modes and mitigation strategies.
4. **Deliverables:**

- Extend your `REPORT.md` with a dedicated section for this proposal
- Include any diagrams or pseudo-code snippets in Markdown.
- Plagiarism on report is 30% accepted , otherwise your submission will be discarded

Evaluation Criteria:

1. Clarity and feasibility of the proposed agentic feature.
2. Depth of integration details and technical reasoning.
3. Quality of impact and risk analysis.
4. Overall report structure, readability, and originality.