Project Brief: AI Cover Letter Writer

Project Title: AI Cover Letter Writer

Project Overview:

The AI Cover Letter Writer is an intelligent, web-based application designed to help users generate high-quality, professional cover letters tailored to their job applications. Building on the previous script-based version, this new implementation introduces a Flask-powered interface for seamless user interaction, enhanced customisation, and real-time AI feedback. Users can enter their CV details and job description, refine AI-generated content before finalising, and export their cover letter efficiently.

Objectives:

1. **Improve accessibility** by transitioning from a command-line Python script to a **fully interactive web app**.
2. Ensure **high-quality, professional** cover letter generation using **Gemini 2.0 Flash** for optimised text output.
3. **Enable customisation** so users can modify AI-generated content before finalising.
4. Provide **real-time feedback** via live preview and editing options.
5. Implement **efficient document export** features, including copy-to-clipboard and PDF downloads.
6. Explore **email integration** for direct job application submission.

Key Features:

1. **User-Friendly Web Interface:** Powered by Flask, allowing users to input their **CV details** and **job descriptions** with ease.
2. **AI-Powered Cover Letter Generation:** Utilises **Gemini 2.0 Flash** to craft structured, natural-sounding cover letters.
3. **Live Preview & Editing:** Users can **view and modify** AI-generated cover letters before exporting.
4. **Customisation Tools:** Allows users to refine content by adjusting structure, tone, and wording for personalisation.
5. **Copy & Export Options:** Provides **copy-to-clipboard** functionality and **PDF download** for easy document sharing.
6. **Database Integration:** All **user input stored** in developer-defined **fields in a database** for easy **reusage of user data**, e.g. Employability Skills, Past education, Work Experience etc.
7. **Potential Email Integration:** Future development may enable **direct job application submission** through email.

Technical Specifications:

1. **Programming Language:** Python
2. **Frameworks and Libraries:**
    - Flask for web application development
    - Gemini AI models for text generation
    - Jinja2 for dynamic UI rendering
    - HTML/CSS/JavaScript for front-end customisation
3. **Database:** SQLite for storing user-defined configurations and logs.
4. **Deployment:** Docker containerization and cloud service deployment (e.g., AWS or Azure).
5. **Version Control:** Git for source code management.

Expected Outcomes:

1. A **fully automated yet customizable** AI-powered tool for professional cover letter generation.
2. High-quality, **well-structured cover letters** that feel like they were manually written.
3. **Efficient job application process**, reducing the time spent crafting cover letters.
4. **A dynamic and intuitive user experience**, making AI-assisted writing more accessible and user-friendly.

Risks and Mitigations:

1. **Content Accuracy:** Ensure AI-generated text maintains proper structure and relevance through optimised prompts.
2. **Customisation Flexibility:** Implement **user-editable fields** to ensure tailored outputs.
3. **Data Privacy:** Secure user inputs and outputs with encryption and access control measures.
4. **AI Model Optimisation:** Fine-tune AI-generated responses to minimise unnatural phrasing or errors.