## Grant Writing Support Tool

**1. Introduction**

* **Project Overview**: Brief introduction to the project - a web-based tool for grant writing resources.
* **Purpose**: The goal of the project, including the need for an easy-to-use, interactive tool for managing grant proposals and resources.

**2. Approach**

**2.1 Steps Taken to Analyze and Implement the Task**

* **Planning Phase**:
  + **Requirement Gathering**: Identifying the needs of the target audience (grant writers, organizations).
  + **Feature Definition**: Defining key features like draft editor, resources section, and interactive elements.
* **Development**:
  + **Setup**:
    - **Technologies**: Using Node.js with Express for server-side logic, EJS for templating, and body-parser for form data handling.
    - **Dependencies**: Installation of required packages like body-parser, express, ejs, and Google Generative AI.
  + **Implementation**:
    - **Homepage (/)**: Created using EJS, with dynamic content passed from the backend. Implemented with Bootstrap for responsive design.
    - **Draft Editor (/draftEditor)**: Form-based interface for creating and editing grant drafts.
    - **Resources (/resources)**: A section for various guides and tips on grant writing.
    - **Backend Logic**:
      * **Post Endpoints**:
        + **/analyse**: Analyzes user input using the Google Generative AI model.
        + **/suggest**: Suggests content improvements for grant writing.
  + **Error Handling**: Implemented try-catch blocks to manage async errors and ensure user-friendly error messages.
  + **Styling and Animations**:
    - Used CSS animations and Bootstrap utilities to enhance visual appeal.
    - Designed the footer and navigation for consistency across pages.

**3. AI Tools Used**

* **Google Generative AI**:
  + **Purpose**: To analyze and generate content based on prompts for grant writing.
  + **Implementation**:
    - **Model Initialization**: const genAI = new GoogleGenerativeAI("YOUR\_API\_KEY") for model initialization.
    - **Prompt Design**:
      * For **/analyse**: Specify whether the following content is appropriate, room for improvement, needs to be improved for writing grants. Tell if there are any grammatical or tone errors: ${text}
      * For **/suggest**: Using the model's generateContent method to provide suggestions for improving grant writing based on user input.
  + **Challenges**: Managing API key access securely and optimizing prompt design for better accuracy in AI responses.

**4. Prompts**

* **Prompt for /analyse**:

arduino

Copy code

Specify whether the following content is appropriate, room for improvement, needs to be improved for writing grants. Tell if there are any grammatical or tone errors:

${text}

* **Prompt for /suggest**:

vbnet

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Provide suggestions to improve the following grant writing text:

${text}

**5. Challenges and Learnings**

* **Challenges**:
  + **API Limitations**: Managing quota limits and optimizing prompt responses to reduce unnecessary requests.
  + **Error Handling**: Dealing with unexpected issues in AI response formatting.
  + **User Interaction**: Designing a user-friendly experience for the draft editor and resources section.
* **Learnings**:
  + **Prompt Optimization**: Learning how to design effective prompts to elicit desired responses from AI models.
  + **Error Handling Strategies**: Developing better strategies for error handling in asynchronous operations.
  + **User Experience**: Gaining insights into creating intuitive UI/UX designs for web applications.
* **Future Improvements**:
  + **Enhanced AI Integration**: Exploring advanced models for more nuanced analysis.
  + **Further UI/UX Enhancements**: Improving accessibility and responsiveness across devices.
  + **Content Expansion**: Adding more resources and guides to the "Resources" section.

**6. Conclusion**

* Summary of the project’s success in meeting its objectives.
* Future steps for enhancement and potential challenges.
* Acknowledgments to any collaborators, mentors, or resources.

**7. References**

* List of external resources, documentation, or tools used throughout the project.







