

Project Planning

Development Phases

- 1. Requirement Gathering: Identify user needs and design input fields for each scenario
- 2. Frontend UI Design: HTML/CSS-based responsive form creation
- 3. JavaScript Prompt Engine: Logic to generate structured prompts
- 4. Backend Development: Flask API to receive prompt and return Gemini response
- 5. Testing: Check for bugs, hallucinations, and formatting issues in generated emails
- 6. Deployment: Host backend on Render, push frontend to GitHub

Changes During Development

Initially, we started building the UI using Streamlit due to its ease of use and quick setup. However, we found it limiting in terms of layout flexibility and UI responsiveness. After testing, we decided to migrate the frontend to a traditional HTML/CSS/JavaScript stack, which offered better control and integration with the Flask backend.

Additionally, the early use of GPT-Neo in backend logic led to unreliable results due to frequent hallucinations. This prompted us to transition to Google Gemini, improving both the stability and quality of generated emails significantly.

Timeline Overview

Phase	Duration	Description
Planning & Ideation	2 days	Define scope and use cases
Frontend Dev	2-3 days	Build dynamic input forms
Backend Dev	2-3 days	Setup Gemini connection via Flask
Testing	1-2 days	Ensure accurate email generation
Deployment	1 day	Upload backend to Render, update JS URL

Team Roles

- Frontend Developer: Handles UI and prompt formatting
- Backend Developer: Manages Flask server and Gemini integration
- Project Coordinator: Ensures alignment, tracks progress

Evaluation Criteria

- Accuracy of AI-generated content
- Speed of generation
- Responsiveness of UI
- Simplicity and ease-of-use

Scalability & Future Scope

- Add Gmail API to send emails directly
- Add login/auth system for personalization
- Support multiple languages
- Save history of generated emails

This structured and iterative planning process helped us navigate technical throwbacks and design the system to meet all functional requirements effectively.