Phase 1: Foundational Setup & Onboarding (Day 1)

Objective: Build the core user-facing and backend architecture to handle initial user input and profile creation.

1. Frontend Development:

- **User Interface (UI):** Use a pre-built component library (e.g., Tailwind UI, Material UI) to quickly design a clean, responsive single-page application (SPA).
- **User Onboarding:** Create a multi-step form for user profile creation.
    - **User Input:** Ask for name, age, and academic background.
    - **Initial Assessment:** Implement a dynamic questionnaire that uses conversational prompts (e.g., "What's a problem you enjoy solving?" or "Which school subjects excite you the most?") to gather initial insights into interests and soft skills, instead of just asking for a static list.
    - **Data Capture:** Store this user data securely in a database (e.g., Firebase Firestore).

2. Backend & AI Integration:

- **Backend Service:** Set up a simple backend on a platform like Google Cloud Functions or App Engine. This will act as the intermediary between the frontend and the AI models.
- **API Connection:** Connect your backend to the **Gemini API**. Your prompt to the model should be carefully crafted to combine the user's initial profile data with a request to suggest three broad career fields. For example, "Based on a user profile with interests in [user interests], and skills in [user skills], suggest three high-level career fields they might enjoy, and why."

Phase 2: Interactive Learning & Validation (Day 2)

Objective: Develop the core, interactive learning and feedback loop that validates user interest and comprehension before recommending a specific career.

1. Frontend & Learning Modules:

- **Field Selection Display:** Present the three broad career fields suggested by the AI in an easy-to-read format. Allow the user to select one.
- **Dynamic Lesson Generation:** Once a user selects a field (e.g., "AI & Machine Learning"), use your backend to call the **Gemini API** again. The prompt will request a short, engaging, and easy-to-understand lesson on that specific field, formatted as a simple Markdown string. The lesson should focus on key concepts and daily tasks in that field.
- **Quiz Generation:** Immediately after generating the lesson, create another prompt for the Gemini API to generate a short, five-question multiple-choice quiz based on the content of the lesson. This quiz will test the user's comprehension.

- **User Feedback:** Implement a simple rating system or a short feedback form after the quiz asking, "On a scale of 1-5, how much did you enjoy this topic?" and "What aspects of this field did you like most?"

2. Backend & Data Processing:

- **Data Storage:** Save the user's quiz score and qualitative feedback in your database. This data is critical for the next phase.
- **Feedback Analysis:** Perform basic analysis on the user's feedback. You can use a simple NLP model or even a quick call to the Gemini API to analyze the sentiment of the written feedback. This provides deeper insight than just the quiz score alone.

Phase 3: Final Recommendation & Action Plan (Day 3)

Objective: Synthesize all collected data to provide a validated, personalized career path and an actionable plan for success.

1. Frontend & Final Output:

- **Recommendation Display:** Present the final career recommendations. The UI should be designed to build trust and show how the recommendation was derived from the user's performance and feedback.
- **Dynamic Roadmaps:** For the top recommended career (e.g., "Data Scientist"), use the **Gemini API** to generate a clear, step-by-step career roadmap.
    - **Core Skills:** List essential hard skills (e.g., Python, SQL, Cloud Computing).
    - **Soft Skills:** Include critical soft skills (e.g., Problem-solving, Communication).
    - **Learning Resources:** Suggest specific types of learning resources (e.g., "Complete a course on Coursera," "Build a portfolio project using X dataset").
- **"Why This Path?" Section:** Include a short paragraph that explains *why* the AI made this recommendation, referencing the user's initial interests and their performance on the quizzes. This transparency is crucial for building user trust.

2. Backend & Final Synthesis:

- **Synthesize Data:** This is the most crucial step. Your backend will take all the data collected throughout the process:
    - Initial profile (interests, background)
    - Quiz scores from the lesson
    - Qualitative feedback and sentiment analysis
- **Final API Call:** Use this synthesized data to craft your most specific and powerful prompt for the **Gemini API**. For example: "Based on a user who performed well in the quiz for 'AI & Machine Learning,' and provided feedback that they 'enjoyed the problem-solving aspect,' what is the best specific career path? Also, outline a 3-step action plan for them to start learning this career."