Team Project Proposal - Aria

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Introduction

This is a proposal for a full-stack AI research assistant. Users can upload source materials (like academic papers), and the application will synthesize the content to generate an interactive research timeline and a structured, editable project plan.

Project Summary

Project Name	Aria
Short Description	An AI research assistant that synthesizes source documents to generate interactive timelines and actionable project plans.
Team Enthusiasm Rank (1–10)	____
Team Confidence (1–10)	____
Product Owner	Matthew Boubin (mjb9353)

Project Details

Name

Aria

Description

Aria is a web application that acts as an intelligent research and project management partner. A user begins a project by uploading a collection of source documents (PDFs, text files). Aria's AI engine processes and synthesizes these sources to produce two key outputs: an Interactive Research Timeline and an Actionable Project Plan. The user can then interact with both the timeline and the task list, using them as a dynamic foundation for their work.

Problem Statement

When tackling a new research topic, the initial challenges are twofold: first, to synthesize a large volume of information to understand the key developments and their chronology, and second, to translate that understanding into a structured action plan. Existing tools are siloed: reference managers organize sources, and project managers organize tasks, but no tool bridges the gap by creating an action plan *derived directly from the source material itself*. Aria is designed to solve this specific problem.

User Personas and Major Features

- **Target Users:** Graduate Students, Academic Researchers, Technical Writers.

- **Major Features:**

  - **Source document management (PDF/text uploads)**
  - **AI-powered synthesis of uploaded documents**
  - **Interactive timeline visualization of key concepts**
  - **Generation of an editable, structured task list**

MVP (Minimum Viable Product)

- **User Profiles** - users can create a profile to log in.

- **Source Upload** - users can upload a single PDF document to a project.

- **Static Task Generation** - the system reads the PDF and generates a static, non-editable checklist of tasks based on its content.

- **Basic Display** - the generated task list is displayed to the user.

MLP (Minimum Lovable Product)

- **Multi-Source Synthesis** - users can upload multiple documents, and the AI synthesizes all of them together.

- **Interactive Timeline Generator** - the core feature. The system generates a visual, interactive timeline based on the synthesized sources.

- **Linked Task List** - the generated task list is now linked to the timeline. Clicking a task might highlight the relevant event on the timeline.

- **Editable Plan** - users can fully edit, reorder, and mark tasks as complete.

Nice-to-Have Features

- **Web URL Ingestion** - allow users to add web articles as sources, not just uploaded files.

- **Q&A on Sources** - users can ask questions about their uploaded documents, similar to NotebookLM.

- **Export Timeline & Plan** - users can export their outputs to PDF for presentations or reports.

CRUD Features

User (Researcher)

- **Create** - User profile, new research projects, upload source documents.

- **Read** - The synthesized research timeline, the generated project plan.

- **Update** - Task descriptions and completion status, project titles, metadata for sources.

- **Delete** - Source documents from a project, individual tasks, entire projects.

Similar Already Existing Applications & Our Novelty

- **Notion AI / ClickUp:** These are general-purpose project management tools with bolt-on AI features. They can generate generic plans but **cannot** read a collection of user-provided academic papers and generate a specific, context-aware research timeline from their contents. Their AI is not designed for deep content synthesis.

- **Google's NotebookLM:** An excellent tool for querying and summarizing a user's source documents. However, it is a Q&A and note-taking tool, not a project manager. It **does not** generate a structured, actionable task list or a visual timeline to guide a long-term project.

- **Zotero / Mendeley:** These are reference managers designed to store and cite sources. They are essential for researchers but possess no AI synthesis or project planning capabilities.

Aria's Novelty: Our application's novelty lies in the **synthesis of these two domains**. It is the bridge between a research assistant (like NotebookLM) and a project planner (like Asana). It is the only tool designed to transform a collection of static source documents into a dynamic, visual, and actionable project roadmap.