■ PRD: Real-Time Collaboration Tool

1. Overview

A collaborative note-taking and task management tool where multiple users can edit content in real-time, similar to Google Docs or Notion-lite.

2. Objectives

- Enable real-time collaboration across multiple users.
- Showcase skills in WebSockets, scalable backend design, and modern UI/UX.
- Demonstrate handling of concurrency and data synchronization.

3. Key Features

- Authentication (User registration/login/logout, role-based access).
- Workspaces & Documents (CRUD, markdown editor support).
- Real-Time Collaboration (live editing via WebSockets).
- Version History (track changes, rollback).
- Optional: Task management, comments, AI-assisted summarization.

4. Tech Stack

- Frontend: React + Tailwind CSS + Slate.js/TipTap
- Backend: Django Channels (WebSockets) or Node.js + Socket.io
- Database: PostgreSQL
- Real-time Sync: WebSockets / Firebase Firestore
- Deployment: Docker + AWS/Heroku

5. Milestones

1. Setup project (backend + frontend).
2. Implement authentication & role management.
3. Create workspaces & document CRUD.
4. Add real-time editing with WebSockets.
5. Implement version history.
6. Deploy MVP.
7. (Optional) Add tasks, comments, AI features.