Project Plan – DocuChain

1. Timeline

Week(s)	Task
Week 1–2	Problem research, competitor analysis, requirement gathering
Week 3–4	Smart contract development, testing on local blockchain
Week 5–6	Frontend (React) and Backend (Node.js + ethers) development
Week 7	Integration testing (frontend + backend + smart contract)
Week 8	Final MVP deployment on Vercel, Railway, and Polygon Amoy Testnet

2. Milestones

• Smart Contract Deployed on Polygon Amoy Testnet — DONE

• MVP Functional: Issuer dashboard and verification portal. — DONE

• First Letter Issued & Verified on-chain. — DONE

• Public demo + testing with sample institutions. — Scheduled on April 17th, 2025

3. Tools & Platforms

- Development: GitHub, Hardhat, Visual Studio Code
- Deployment: Vercel (frontend), Railway (backend), Polygon (Alchemy RPC)
- UI/UX Design: Figma
- Storage (Future): IPFS
- Authentication: Email, Firebase, Json file (for MVP)

5. Risks & Mitigation

Risk	Mitigation
Blockchain complexity	Use existing open-source templates and UUPS proxies via OpenZeppelin
UI/backend delays	MVP built with minimal features first; prioritize functionality over polish
Deployment errors	Deploy using tested CI/CD workflows and run full test cases before final push
Limited resources	Keep team lean, reuse tools and focus on building core value early

6. MVP vs. Full Product

The current MVP focuses on demonstrating core blockchain functionality:
- Issuing and verifying offer letters on-chain
- Basic issuer dashboard and public verification page
- JSON file for issuer authentication
- Hosted on free-tier cloud services (Vercel, Railway)

Full Product Vision (Post-MVP):
- Role-based dashboards (HR, students, immigration)
- On-chain + IPFS hybrid verification
- Email, Firebase Signup/Sign in for issuers
- Multi-language support
- Analytics dashboard for issuers
- Enterprise licensing model and UI polish
- Multi-country deployment (Canada, UK, Australia)