

**Project Title:** Document Signature App (DocuSign Clone)

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## 2-Week Build Plan



### Week 1: Core Features, Backend & Frontend Setup

#### Day 1: Project Setup & Repo Initialization

- Create GitHub repo with MERN folder structure
- Initialize React app with Tailwind CSS
- Setup Node.js + Express + MongoDB (Mongoose)
- Install necessary libraries (Multer, PDF-Lib, bcrypt, JWT)  
**Skills:** Project scaffolding, Tailwind setup, server setup

#### Day 2: Auth System (JWT)

- User model: name, email, password
- Routes: /register, /login
- JWT auth + bcrypt password hashing
- Auth middleware for protected routes  
**Skills:** JWT, secure user auth, API routes

#### Day 3: File Upload API

- Setup Multer for PDF uploads
- Store file path & metadata in MongoDB
- Routes: /api/docs/upload  
**Skills:** File handling, middleware, API design

Admin Aditya

#### Day 4: View & List Documents

- API to fetch user's uploaded files
- Display files in a dashboard
- Add preview functionality using `react-pdf`  
**Skills:** RESTful APIs, PDF rendering in React

#### Day 5: Signature Schema & Logic

- Signature Model: field, coordinates, signer, status
- Route to save signature positions (x, y)
- Display signature placeholder on PDF  
**Skills:** Schema relations, position-based rendering

#### Day 6: PDF Editor Integration

- Add drag-and-drop signature field (HTML overlay)
- Save coordinates relative to page
- Route: POST /api/signatures  
**Skills:** Coordinate systems, frontend UX logic

#### Day 7: Buffer / Testing

- Debug UI and backend integration
  - Write Postman tests for API
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## ✓ Week 2: Signature Rendering, Sharing & Polish

### Day 8: Generate Final Signed PDF

- Use **PDF-Lib** to embed signature text/image
- Export signed version to disk/cloud  
**Skills:** PDF processing, server-side document generation

### Day 9: Email + Public Signature Links

- Generate tokenized URL for external signature
- Email link to signer (use nodemailer or mock)  
**Skills:** Token auth, email logic

### Day 10: Audit Trail

- Log who signed, when, and IP (use middleware)
- Route: GET /api/audit/:fileId  
**Skills:** Middleware logging, basic audit management

### Day 11: Signature Status Updates

- Status: Pending, Signed, Rejected
- Allow signer to accept/reject with reason  
**Skills:** Status flows, conditional logic

### Day 12: Dashboard UI Polish

- Filter by signature status
- Responsive layout with Tailwind  
**Skills:** Tailwind UI polish, component reuse

## Day 13: Deployment

- Backend: Render / Railway
- Frontend: Vercel / Netlify
- MongoDB Atlas for DB

## Day 14: Final Testing + Demo

- Prepare a GitHub README
- Record a 2-min demo walkthrough

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## GitHub Folder Structure

```
/signature-app
|-- /client
|   |-- /src
|       |-- /components
|       |-- /pages
|       |-- /utils
|-- /server
|   |-- /controllers
|   |-- /models
|   |-- /routes
|   |-- /middleware
|   |-- /utils
|-- .env
|-- README.md
```

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## API Endpoints & Mock Data

### Auth APIs

```
POST /api/auth/register
POST /api/auth/login
```

## Document APIs

POST /api/docs/upload // Upload PDF  
GET /api/docs/ // List user PDFs  
GET /api/docs/:id // View specific doc

## Signature APIs

POST /api/signatures // Save signature position  
GET /api/signatures/:id // Get signatures for document  
POST /api/signatures/finalize // Embed signature into PDF

## Audit APIs

GET /api/audit/:docId

## Mock Data: User

```
{  
  "name": "Alice",  
  "email": "alice@example.com",  
  "password": "hashedpassword"  
}
```

## Mock Data: Signature

```
{  
  "documentId": "abc123",  
  "userId": "xyz456",  
  "x": 120,  
  "y": 330,  
  "page": 1,  
  "status": "signed"  
}
```

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## Skills You Will Learn by Stage

Week	Skill	Description
1	Auth & API	JWT, bcrypt, REST APIs
1	File Upload	Multer, server-side storage
1-2	Frontend UX	Drag-and-drop UI, react-pdf
2	PDF Generation	<code>pdf-lib</code> for embedding data
2	Security	Tokenized links, protected routes
2	Audit Logging	Middleware, action tracking
2	Deployment	Hosting full-stack app

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## Learning Resources

1. **PDF-Lib JS Docs:** <https://pdf-lib.js.org/docs>
  2. **MERN Auth (JWT):** <https://www.youtube.com/watch?v=2jqok-Wgell> (PedroTech)
  3. **Multer File Upload:** <https://www.youtube.com/watch?v=9Qzmri1WaaE>
  4. **PDF Signature with Node:**  Signing a PDF with Javascript - Going though the code
  5. **React PDF Viewer:**  How to View PDFs in React JS with React PDF Viewer
  6. **React Drag and Drop Signatures:**  
 React Drag And Drop (dnd-kit) | Beginners Tutorial
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## Tech Stack

Frontend - React or Its Framework, Tailwind CSS

Backend - Node Js, Express Js

Database - Any DB which you know (Supabase, Postgress SQL, Mongo DB)



## Final Deliverables

- Responsive full-stack app
- Upload/view/sign/share PDFs
- Secure signature handling with audit logs
- GitHub repo + README + demo video