Full Stack Development Internship Tasks – Nexus Platform

Project: Nexus – Investor & Entrepreneur Collaboration Platform
Duration: 3 Weeks
Objective: Make the current version of Nexus fully functional by integrating backend logic, APIs, and database. Enhance it with advanced features including Meeting Scheduling, Video Calling, Document Processing Chamber, Payment Section, and Security.

Base Material

- **Frontend Repo (to extend):** Nexus GitHub Repo
- **Deployment Link (reference):** https://nexus-iota-five.vercel.app/login

Deliverables Each Week:

- Updated GitHub Repo (frontend + backend integration)
- Working Deployment (Frontend on Vercel + Backend on Render/Heroku/AWS)
- Weekly documentation of work done

Week 1 – Setup & Core Backend Foundations

Milestone 1: Environment Setup & Codebase Familiarization

- Fork and clone the Nexus repo.
- Set up backend environment (Node.js + Express + MongoDB/PostgreSQL).

- Connect frontend with backend.
- Document existing frontend features that require backend APIs.

Milestone 2: User Authentication & Profiles

- Implement **secure authentication** (JWT-based).
- Role-based access: **Investor vs Entrepreneur dashboards**.
- Build APIs for user registration, login, profile management.
- Link profiles to DB → store extended profile info (bio, startup/investment history, preferences).

Deliverables:

- GitHub repo with backend setup.
- Functional authentication system.
- Profiles stored/retrieved from DB.

Week 2 – Collaboration & Document Handling

Milestone 3: Meeting Scheduling System (Backend)

- Create APIs for:
    - Scheduling, accepting, rejecting meetings.
    - Sync with **calendar library** on frontend.
- Store meeting data in DB.
- Ensure conflict detection (prevent double booking).

Milestone 4: Video Calling Integration (Basic)

- Implement **WebRTC signaling server** with Node.js/Socket.IO.
- Enable frontend to connect calls via backend.
- Features: Join room, toggle audio/video, end call.

Milestone 5: Document Processing Chamber

- Build document upload & storage API (Multer/Cloud Storage like AWS S3).
- Preview documents in frontend (React PDF viewer).
- Store metadata in DB (uploaded by, version, status).
- Implement **e-signature** storage (signature image linked to doc).

Deliverables:

- Functional APIs for scheduling meetings, handling video calls, and document management.
- Frontend connected to backend for all 3 modules.

Week 3 – Payments, Security & Deployment

Milestone 6: Payment Section (Mock Integration)

- Implement **payment APIs** with Stripe/PayPal sandbox.
- Create transaction endpoints: deposit, withdraw, transfer.
- Store transactions in DB with proper status (Pending, Completed, Failed).

- Show transaction history in frontend dashboard.

Milestone 7: Security Enhancements

- Add **form validation and sanitization** (prevent XSS/SQL injection).
- Implement **password hashing (bcrypt)** and secure JWT tokens.
- Add **2FA mockup** (send OTP/email via Nodemailer or mock API).
- Enable role-based authorization for protected routes.

Milestone 8: Final Integration & Deployment

- Integrate all modules (Calendar, Video, Documents, Payment, Security) smoothly.
- Deploy **frontend (Vercel)** + **backend (Render/Heroku/AWS)**.
- Provide **API documentation** (Swagger/Postman).
- Prepare **demo presentation** with working flows.

Deliverables:

- Fully functional Nexus platform (frontend + backend).
- Production-ready deployment.
- API documentation + demo presentation.

Final Output Expected from Interns

By the end of 3 weeks, full stack interns must deliver:

1. **Functional web app** with all core features working:
    - Authentication & Profiles.

    - Meeting Scheduling Calendar.
    - Video Calling.
    - Document Chamber with e-signature.
    - Payment Simulation.
    - Security features.

2. **GitHub Repository (Frontend + Backend)**.
3. **Live Deployment (Frontend + Backend)**.
4. **API Documentation**.
5. **Final Demo Presentation**.

DEADLINE: 17th January, 2026