Product Requirements Document (PRD): Innovation Hub

1. Executive Summary

The Innovation Hub is a full-stack platform designed for universities to nurture, manage, and accelerate student innovations. It connects students, college administrators, incubators, and super admins within a single, collaborative ecosystem.

2. Purpose and Scope

- Provide a centralized platform for managing idea submissions, endorsements, incubation, and analytics.

- Support multiple user roles with different dashboards and permissions.

- Ensure secure, scalable, and reliable operations for all modules.

3. Core Product Features

3.1 Authentication & Authorization

- User registration, login, logout with JWT authentication.

- Role-based access: Student, College Admin, Incubator Manager, Super Admin.

- Persistent token refresh and session security.

3.2 User Profile Management

- Complete profile with editable fields: Name, Email, Phone, Department, College/Incubator, Year, Roll Number, GPA, Bio, LinkedIn/GitHub/Portfolio, Skills.

- Profile image upload and update.

- Fast & persistent changes, with input validation.

3.3 Idea Management System

- Idea submission, including file attachments and team member assignment.

- Idea review and approval/endorsement workflows.

- Idea status transitions: Draft → Submitted → Reviewed → Approved → Funded.

- Commenting, likes, feedback, and team collaboration.

3.4 Dashboards

- **Student:** Submit/view ideas, track status, see feedback.

- **College Admin:** Endorse student ideas, manage student list, access analytics.

- **Incubator:** Review & approve ideas, manage startup resources, analytics.

- **Super Admin:** Global platform controls, reporting, user/role management.

3.5 College & Incubator Management

- View, add, update, and manage college and incubator details.

- Upload/update institution logos and focus areas.

- Monitor statistics, occupancy, and performance.

3.6 Notification System

- In-app notifications with filtering and unread counters.

- Email alerts on critical events: approvals, feedback, new assignments.

- Admin notification preferences.

3.7 Analytics & Reporting

- Key platform stats: total users, ideas submitted, approval rates, active incubations.

- Detailed role-based analytics dashboards.

- Download/export analytics reports.

4. Technical Requirements

- **Frontend:** React.js, Redux Toolkit, React Router, axios, Tailwind/Material UI.

- **Backend:** Node.js, Express.js, Sequelize ORM, JWT, Multer for uploads.

- **Database:** MySQL or SQLite (for dev/testing); model migration support.

- **Authentication:** JWT, refresh tokens, middleware for protected routes.

- **File Storage:** Local with migration path to cloud (if needed).

5. Constraints & Assumptions

- Must be deployable on standard Linux server or cloud service.

- User data and files are securely stored and validated.

- Support for API integrations and unit/end-to-end testing.

6. Success Metrics

- 99% successful user registration and login attempts.

- All submitted ideas persist in DB and visible to correct dashboards.

- Profile updates reflect immediately for all users.

- No loss of data on server restart.

- <2s average page load for all users.

7. Out-of-Scope (MVP)

- No mobile app in MVP.

- No payment gateway integration (future).

- OAuth/SSO authentication (future).

- Real-time chat (future).