### **Product Specification Document: Note-Taking and Management Application**

**PlannerPulse**

#### **1. Introduction**

This document outlines the specifications for a note-taking and management application designed to enhance productivity and collaboration. The application supports basic authentication, CRUD operations on notes, priority and deadline management, note sharing, progress tracking, point system for task completion, end-to-end encryption, and a powerful search engine with advanced filters.

#### **2. Features**

1. **User Authentication**
   * **Registration/Login:** Users can register and log in using email and password.
   * **\*\*Two-Factor Authentication (2FA):** Optional for enhanced security.
2. **Note Management**
   * **Create, Read, Update, Delete (CRUD):** Full CRUD operations on notes.
   * **Rich Text Editor:** Supports text formatting, images, and attachments.
   * **\*\*Multimedia Support:** Notes can include images, voice notes, and video clips.
3. **Priority and Deadline Management**
   * **Set Priority:** Users can assign priorities to notes (e.g., high, medium, low).
   * **Set Deadlines:** Users can set deadlines for notes and tasks.
4. **Sharing and Collaboration**
   * **Note Sharing:** Users can share notes with other users.
   * **\*\*Real-Time Collaboration:** Multiple users can edit notes simultaneously.
   * **Color Themes:** Shared notes can have color themes for easy identification.
5. **Progress Tracking**
   * **Status Update:** Notes can have status indicators (e.g., not started, in progress, completed).
   * **Progress Edit:** Users can update the progress status of their notes.
6. **Points System**
   * **Task Completion Points:** Users earn points for completing tasks before or on the deadline.
   * **Points Calculation:** Points are based on task priority and size.
7. **Security**
   * **End-to-End Encryption:** Ensures that notes are encrypted from creation to storage and access.
   * **Encryption Options:** Users can encrypt specific notes or all notes by default.
8. **Search and Filtering**
   * **Powerful Search Engine:** Allows searching notes by keywords.
   * **Advanced Filters:** Users can filter notes by date, priority, tags, and status.
9. **User Interface**
   * **Dashboard:** Customizable dashboard displaying important notes, deadlines, and tasks.
   * **Themes:** Users can choose from various themes for the application interface.
   * **Widgets:** Quick access widgets for note-taking and viewing.

#### **3. Technical Requirements**

1. **Backend**
   * **Server:** Node.js with Express framework
   * **Database:** MongoDB for storing notes and user information
   * **Authentication:** JWT for user authentication
2. **Frontend**
   * **Framework:** React.js for a responsive and dynamic user interface
   * **State Management:** Redux for managing application state
   * **Styling:** CSS-in-JS (styled-components) for component-based styling
3. **Mobile Support**
   * **React Native:** For cross-platform mobile application development
   * **Offline Access:** Local storage for offline note access and synchronization
4. **Security**
   * **Encryption:** AES-256 for end-to-end encryption of notes
   * **2FA:** Google Authenticator or SMS-based two-factor authentication

#### **4. User Stories**

1. **User Registration and Login**
   * As a user, I want to register with my email and password.
   * As a user, I want to log in to my account securely.
2. **Creating and Managing Notes**
   * As a user, I want to create new notes with rich text formatting.
   * As a user, I want to update and delete my notes.
3. **Priority and Deadline Management**
   * As a user, I want to set priority levels for my notes.
   * As a user, I want to assign deadlines to my tasks.
4. **Sharing and Collaboration**
   * As a user, I want to share my notes with other users.
   * As a user, I want to collaborate on notes in real-time.
5. **Progress Tracking and Points System**
   * As a user, I want to update the progress status of my notes.
   * As a user, I want to earn points for completing tasks on time.
6. **Security and Encryption**
   * As a user, I want my notes to be encrypted to ensure privacy.
   * As a user, I want to enable two-factor authentication for my account.
7. **Search and Filtering**
   * As a user, I want to search my notes by keywords.
   * As a user, I want to filter my notes by date, priority, tags, and status.

#### **5. Milestones and Timeline**

1. **Phase 1: Planning and Design (2 weeks)**
   * Requirements gathering
   * Design wireframes and user interface mockups
2. **Phase 2: Backend Development (4 weeks)**
   * Set up server and database
   * Implement user authentication and encryption
3. **Phase 3: Frontend Development (6 weeks)**
   * Develop the user interface with React.js
   * Implement note CRUD operations and sharing features
4. **Phase 4: Mobile Development (4 weeks)**
   * Develop mobile application with React Native
   * Ensure offline access and synchronization
5. **Phase 5: Testing and QA (3 weeks)**
   * Conduct thorough testing of all features
   * Fix bugs and optimize performance
6. **Phase 6: Deployment and Launch (2 weeks)**
   * Deploy the application to production
   * Launch marketing campaign and gather user feedback

#### **6. Conclusion**

This note-taking and management application aims to provide a comprehensive and secure platform for users to manage their notes efficiently. With features like end-to-end encryption, real-time collaboration, and a robust search engine, the application is designed to stand out in the market and offer an exceptional user experience.