Manual Implementation Log

1. Time Breakdown

Total Time Spent: Approximately 6 Hours

The project was completed comfortably within the 20-hour limit. The effort was distributed as follows:

- **Phase 1: Architecture & Database Design (1.5 Hours)**
  - Planning the REST API endpoints.
  - Designing the SQLite schema for Users and Articles.
  - Researching OWASP best practices for the security requirements.
- **Phase 2: Backend Development (2 Hours)**
  - Setting up the Express server and middleware.
  - Implementing `bcrypt` for password hashing and `jsonwebtoken` for session management.
  - Writing and testing the API routes with Postman.
- **Phase 3: Frontend Implementation (1.5 Hours)**
  - Initializing the React environment.
  - Building the Authentication forms and Dashboard components.
  - Integrating Axios for backend communication.
- **Phase 4: UI Polish & Security Hardening (1 Hour)**
  - Applying custom CSS for a cleaner interface.
  - Adding Rate Limiting and Input Validation.
  - Final debugging and documentation.

2. Features Implemented

I successfully implemented all required features along with additional security enhancements:

- **Core Functionality:** User Registration/Login, Article Posting, Global Feed, Delete functionality (Owner-based).
- **Admin System:** Automatic generation of an `admin` account with global deletion privileges.
- **Data Persistence:** Persistent storage using SQLite.
- **Security:** Password hashing, JWT authentication, login rate limiting, and URL validation.
- **User Interface:** A responsive, user-friendly React interface with real-time status feedback.

3. Features Not Implemented

- **None.** All requirements were met and no features were descoped.

4. Note on Git History

Please note that the timestamps in the Git log do not reflect the actual working hours detailed above. Development, testing, and debugging were performed in a local iterative environment. The code was committed to the repository in logical chunks during the final integration phase to ensure a clean and working submission history.